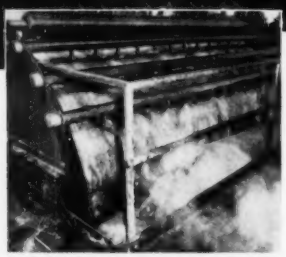
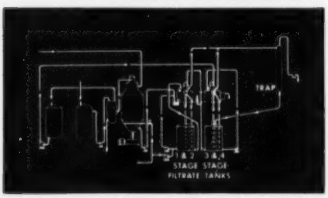
Paper TRADE JOURNAL
SEPTEMBER 29, 1949
PUBLISHED WEEKLY

Three-drum five-stage Swenson-Nyman Pulp Washing System in operation on Kraft board pulp.



Close-up showing sheet formation and liquor shower arrangement on middle drum of same installation.



Flow sheet of 2-drum, 4-stage installation

PULP WASHING

with less dilution, lower chemical loss, lower steam consumption

The Swenson-Nyman Pulp Washer, now in operation in many leading pulp mills, is bringing substantial economies in both chemicals and fuel. Closed system eliminates spillage and low dilution, reduces the evaporator load, and hence steam requirements.

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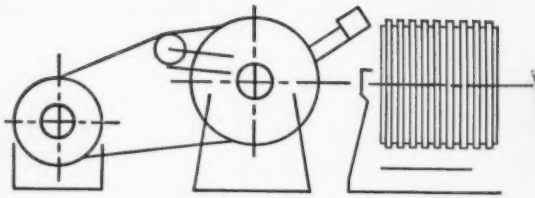
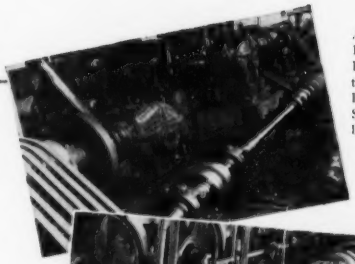
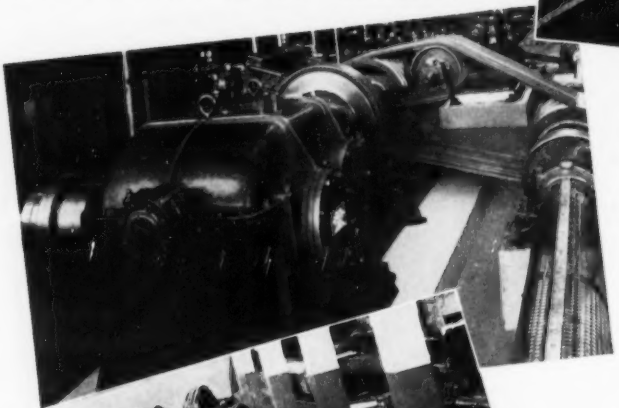


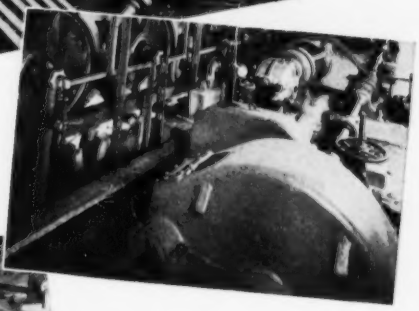


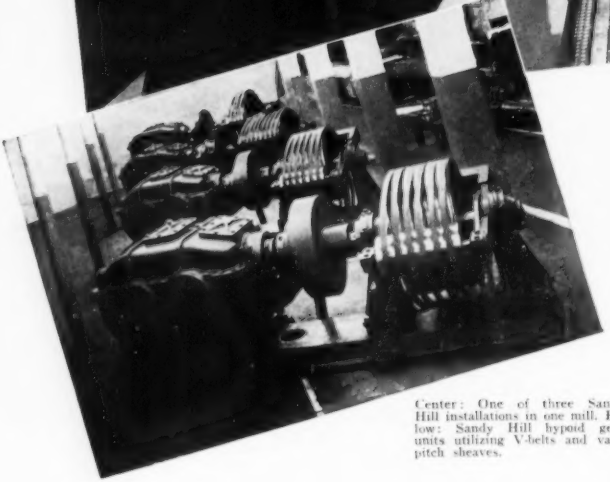
At left: Selective Drive on Sandy Hill high grade tissue machine. Below: Another Sandy Hill installation.

Sandy Hill Drives

for Power...for Control







Center: One of three Sandy Hill installations in one mill. Below: Sandy Hill hypoid gear units utilizing V-belts and variable pitch sheaves.

Sandy Hill Selective Drives provide the perfect answer to the major requirements of paper machine operators. They provide unvarying draw between sections, fineness of draw regulation, exact draw maintenance, simplicity, efficiency and low first cost.

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FOR THE PAPER INDUSTRY

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SEPTEMBER 29, 1949 In This Issue

FEATURES

	Page
Canada Evaluates Devaluation	14
APPA Weighs Devaluation	15
Devaluation and Newsprint	15
Wallboard from Waste	17
Paper Stocks for the Blueprint Industry	21
British Columbia Pulp & Paper Co., Ltd., Modernizes Woodfibre and Port Alice Plants	24
St. Regis Log Handling	28
Skylift Cuts Garber's Costs	28
Several Paper Machines Recently Built by "Sandy Hill"	29
Pulp, Paper and Board Industry, Sept. 1949 Report	35

DEPARTMENTS

	Page		Page
Trends	7	Materials	32
Mills	8	Product Development	32
Forestry	11	Financial Record	33
Associations	12	Literature	34
Miscellany	14	Imports	34
Foreign	17	Markets	35
Suppliers	18	Production Ratio Report	38
Industrial Development Section	21	Obituaries	38
Prices	30	Classified Advertising	42

INDEX TO ADVERTISERS ON PAGE 50

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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL, Wednesday, Sept. 28, 1949.

Pulp Price Determinants

Consensus of industry officials here is that *demand* — of itself — is determining the trend of pulp prices, also that their best guess is for a heavy demand to be sustained during the next few months, barring no major upset to general business from strikes, etc. Three factors supporting their judgment are: increased demand for paper and board products for Fall and Christmas trade; low merchant stocks of these products which must be rebuilt; and notably inadequate consuming mill inventories of pulp to meet such an increase in demand. Heavy seasonal buying of wood pulp, which assures the mills of adequate stocks during *closed water* months, will probably be lighter this year, it is thought, by reason of the sizable stocks of Scandinavian pulp being retained here.

Swedish Inventories

Further comment on the publicity given in New York papers recently to accumulating Swedish pulp stocks — a report which led many U.S. buyers to expect lower fourth quarter prices — a Swedish journal says that the figure of 500,000 tons "is considerably exaggerated and should be corrected. We understand that by the end of July the unshipped stocks amounted to just over 300,000 tons of paper cellulose; and it should be noted that a large portion of that quantity is sold under previously or recently signed contracts and is awaiting shipment. . . . Loading is now active, and the unshipped stocks will rather diminish than the reverse," it states.

Pulp Prices Stable

A growing stability characterizes domestic and Scandinavian pulp markets. The strength noted in domestic fourth-quarter quotations is affirmed in announcements from Norwegian, Finnish and Swedish agents that devaluation will not effect a revision in their quoted prices; they have no intention of changing them. It is held as likely by importers that some unwanted lots and qualities may now appear on the spot market at a price for quick disposal. With the exception of an adjustment in Swedish unbleached kraft to meet the domestic level, all prices are pegged at third-quarter prices.

Paper Market Stability Grows

What cannot be overlooked in any study of the market is the fact that buyers of paper products have been expecting downward revisions of paper prices to follow cuts in fourth-quarter pulp prices, that inventory buying has been deferred for those reductions. Firmness in pulp prices must therefore be immediately reflected in a more active and healthy paper market.

The stability for which the industry has been striving throughout the post-boom readjustment appears to have set in.

Canadian Dollars and Newsprint

Three leading producers of Canadian newsprint have plainly stated that the 10 percent devaluation of the Canadian dollar will not alter the current contract price of newsprint ($100 delivered New York). Statement made to *Paper Trade Journal* by New York office of Bowater Paper Company also is to the effect that they "have received no word of any change in the price of newsprint."

An exchange of telegrams between its general manager Cranston Williams and the International Paper Sales in Montreal and Abitibi Power and Paper Company in Toronto was made public by the ANPA. In reply to Mr. William's telegram asking what price action could be expected as a result of devaluation, International Paper Sales said, "Widespread currency devaluation threatens to jeopardize all of our overseas markets, and will undoubtedly affect manufacturing costs to an extent not now ascertainable. Accordingly we are not taking any price action." Abitibi, replying similarly, stated that the current newsprint price to U. S. consumers is "entirely equitable." Powell River Co., Ltd., had earlier stated through its president, H. S. Foley, that they had no intention of reducing the selling price for newsprint.

Newsprint Association of Canada Speaks

Commenting on statement made by Mr. Williams on September 20 — carried by *Trends*, issue of September 22 — that when the Canadian dollar was raised to parity with the U.S. dollar in July, 1946, Canadian manufacturers raised the newsprint price from $68 to $74.80 stating that "this increase only offsets the loss to us caused by the recent revaluation of the Canadian dollar." R. M. Fowler, president of the Newsprint Association of Canada, said that the increase in question came after price control in the U.S. had expired. Actually, Mr. Fowler said, restoration of price control on July 25, 1946, wiped out the increase. "It was in mid-August 1946 that a price increase of $7 per ton was permitted by the revivified OPA, an action which made no reference to the changes in exchange rates, but was based solely on increased costs of production and the need of assuring more adequate supplies for the U. S. market. In these circumstances, the abortive action taken in July, 1946, affords no precedent for the present situation," he stated. "Present monetary problems and the overriding national interest which these currency changes are designed to serve transcend any considerations which operated three years ago in an entirely different economic situation." U.S. publishers will pay the same amount in U.S. funds for Canadian newsprint, Mr. Fowler said.

Canadian Freight Rate Upped

Canadian railways were granted an increase of 8 percent in freight rates on September 22. Giving as the opinion of the Canadian Board of Transport Commissioners that the former 21 percent boost granted last year should have been only 15 percent, Justice M. B. Archibald, chief commissioner, said they were granting only an 8 percent increase at this time.

Dollar Cuts and Newsprint

It is believed in London that no licenses for the import of Canadian newsprint will be granted for 1950, a leading British journal reports. Licenses already granted for the import of 35,000 tons for this year and for 5,000 tons in the first half of 1950 will not be cancelled by the Government, it also states. Suspension of individual ten-year newsprint contracts between Australia and Canadian mills would then be necessary. It is estimated that a cut of one-third in the import of Canadian newsprint in Britain is likely, although some Australian sources expect a complete cut to be made.

Production Indexes

Ratio of production of unbleached kraft paper to potential mill capacity for that product was 80.3 percent for the week ended September 17, compared with 59.9 percent for the preceding week, and with 92.1 for the corresponding week of last year.

Comparative ratios of U. S. paper and paperboard production to mill capacity, as reported by AP&PA, are:

	Sept. 17 1949	Sept. 10 1949	Sept. 18 1948	Sept. 20 1947	Sept. 21 1946
Paper	93.8	174.1	97.5	107.0	105.8
Paperboard	92.0	72.0	97.0	101.0	100.0

‡ Revised.

Paperboard Production (Tons)

	Sept. 17 1949	Sept. 10 1949	Sept. 18 1948
Production	205,128	157,135	192,334
New Orders	197,991	172,995	173,044
Unfilled Orders	369,573	380,248	386,808

Percent of Activity, Current, 92%; Year, 79%.

General Business Indexes

Index of general business activity for the week ended September 17 inclined to 140.8 from 139.0 in the preceding week, compared with 147.1 in the corresponding week of 1948. Index of paperboard production climbed to 187.4 from 182.8 in the preceding week, compared with 175.8 in the corresponding week of 1948.

(Continued on page 38)

Paper TRADE JOURNAL

News of the Week

MILLS

To Build Duncan Bay Mill

DUNCAN BAY, B. C. — Erection of a pulp mill here, has definitely been decided upon according to Robert Filberg, vice-president of the Canadian Western Lumber Co. Mr. Filberg stated that the plant will cost between $35 and $40 million dollars, which is about three times as much as was originally estimated. The payroll, including logging operations, will, it is estimated, be approximately $2,000,000 annually. About 200 men would be employed in the mill and 400 men in forest operations.

Mr. Filberg said the company would build a plant with a capacity of at least 300 tons of high-grade dissolving pulp daily. A small, fresh-water lake will be created near Duncan Bay in connection with the mill.

Mr. Filberg declined to intimate when actual construction on the plant would start. It is believed, however, that the plant will be in operation before the end of 1952. The company recently received a forest management license from the B. C. government, which is subject to cancellation at the end of 1952 if a plant is not operating by that time. The site of the proposed plant is approximately six miles north of Campbell River.

Six Default Judgments Entered

WATERTOWN, N. Y.—The Frontenac Paper Co. of Dexter is named defendant in six suits brought to recover for either materials furnished or for services rendered and in them default judgments have been entered in the County Clerk's office. The cases are: Arthur A. Alcombrach, former superintendent, $1,864.49, for services; Jack Phillips, $1,382.50, for services; David Cote, $598.12, for materials; Burrell Rowe, $315.62, for labor; Carl Koops, $222.50, for oil and gasoline; Garland A. Jumps, $98.58 for building materials.

Norway's Stoylen U. S. Visitor

PORTLAND, Ore.—Hallstein Stoylen, mill manager for the Borregaard Co., of Sarpsborg, Norway accompanied by his San Francisco-born wife, Stoylen, is on a three-month tour of American pulp and paper mills.

Mr. Stoylen is studying American machinery and methods for high-speed production which might be incorporated in Norwegian mills now being rebuilt.

"Our mills are simply worn out," Stoylen said. "It was impossible to get repair materials during the war. Labor shortages and the difficult currency situation still are hampering us."

Pulp and paper mills, he said, are having less difficulty than other industries in securing materials because they produce about 40 percent of Norway's export. He said Borregaard exports account for a quarter of that amount. The mill is one of the largest in Scandinavia.

His company has been selling pulp to the United States since 1889, Mr. Stoylen said, but the amount has fallen off since Canada became an important pulp producer. England now is Norway's chief customer, he added.

Scott Advances Heath

CHESTER, Pa. — Scott Paper Co. has named Gilbert L. Heath paper mill superintendent at the Fort Edward, N. Y. plant of the Marinette Paper Co., a Scott subsidiary. As chief field operations engineer, Mr. Heath, who has been with Scott since 1937, was responsible for the rearrangement of pulp preparation facilities at Fort Edward and reconstruction and installation work on paper machines there.

CHRISTOPHER CUSACK

—general manager of the Clondalkin Paper Mills, Dublin, Ireland, arrived in the U. S., via plane, on September 12 for a six-week visit to study recent developments in paper making and paper making equipment in the U. S. . . Mr. Cusack is a B.E., A.M.I. Mech. E. member of TAPPI. . . His itinerary has not been reported to Paper Trade Journal.

Writ of Mandamus Issued

MONTREAL—Issuance of a writ of mandamus to require the St. Lawrence Corp., Ltd., to furnish certain financial information not contained in its annual financial statement was upheld in Superior Court on September 19, in a judgment of Justice Arthur I. Smith.

The writ was sought in July by Joseph Mayr and Mrs. Senta Selz, shareholders, and was issued by Justice Elie Savard. A later date was set for argument.

In the meantime, the corporation made a motion to have the writ quashed, claiming it was irregularly and illegally issued.

Landegger, Newman, Abroad

NEW YORK — Karl F. Landegger, president of Parsons & Whittemore, Inc., will depart within the next few days on his annual visit to several of his firm's foreign offices. John H. Newman, vice-president and export manager, sailed on September 21 aboard the *America* to visit the leading markets of Europe and the far East. He expects to be away until well into 1950. This is Mr. Newman's fourth voyage abroad within the past five years.

Reopening Two Rayon Pulp Plants

VANCOUVER, B. C.—Plans for reopening of the Woodfibre and Port Alice rayon pulp plants of British Columbia Pulp & Paper Co. are reported. The two companies will place 1,070 employees back on the payroll. The Woodfibre plant will resume operations almost immediatey, and the Port Alice plant will resume early in October. Woodfibre employs 487 men and Port Alice, on the northern end of Vancouver Island, about 577 men.

Gen. L. D. Clay Heads Ecusta

PISGAH FOREST, N. C. — General Lucius D. Clay, until recently commander of the U.S. Armed Forces in Europe, will become president of the Ecusta Paper Corp., on October 1, Harry H. Straus, founder of the firm and now its president, reports.

Estate of Mrs. T. M. Gilbert

NEENAH, Wis.—Mrs. T. M. Gilbert Sr., who died on September 11, left an estate valued at $250,000, in stock in the Gilbert Paper Co., according to a will admitted to probate.

Andrews Visiting Australia

VANCOUVER, B. C.—Ian H. Andrews, Powell River Co., research chemist, flew recently to Australia on a brief business trip.

Riegel Resists Power Rate Hike

TRENTON, N. J.—An implication that the Riegel Paper Corp. might move out of New Jersey or expand its generating plant to furnish electric power for its four mills was made on September 16 by John L. Riegel, president and treasurer, before the Public Utilities Commission.

Mr. Riegel was testifying for the paper company at a further hearing on the New Jersey Power & Light Co.'s request to increase its electric rates about $1,015,000 a year. The paper company, largest buyer of current from the electric company, is the only objector.

The witness said the paper company generated about 55 percent of its power requirement and purchased the rest from New Jersey Power & Light Co. The rates proposed by the power company would increase the paper company's annual bill $77,700 from about $566,000, the amount it paid in 1948.

Just before the hearing was adjourned until September 28, Commissioner Powers, who presided, asked where the point of difference was between the power company and objector on the proposed rates. Lloyd Fisher, counsel for Riegel, replied that no prehearing conference had been held between the parties. He said the maximum increase the paper company could stand in its electric rates would be about $10,000.

The company's four mills are at Milford, Warren Glen, Hughesville and Riegelsville within a three-mile radius of each other. The Gilbert Station of New Jersey Power & Light Co., also is within the same radius. About ten years ago, the company purchased 138,000 acres of timberland and a mill site in North Carolina.

With the installation of about 25 percent more steam generating capacity and about 100 percent more electrical generating capacity at its Milford plant, Mr. Riegel said, the company could generate all of its own power. He said engineers estimated that that could be accomplished at a cost of $1,600,000.

David Miller Jr., paper company engineer, testified that the Riegel company could generate its own power by enlargement of its Milford plant at a lower cost than it could buy from New Jersey Power & Light Co. under the proposed rates.

J. R. Kimberly Employes' Club Speaker

APPLETON, Wis.—"All jobs well done are equally important to the Kimberly-Clark Corp.," J. R. Kimberly told approximately 150 members and their wives at the Quarter Century Club dinner, September 20.

Discussing elements that make for security, Mr. Kimberly listed as No. 1, acceptance by the customer of Kimberly-Clark workmanship.

"They have known us by what we put into our products," he said. "There has never been a time when our 25-40 year employees had any legitimate cause for worry about Kimberly-Clark not being profitable and healthy."

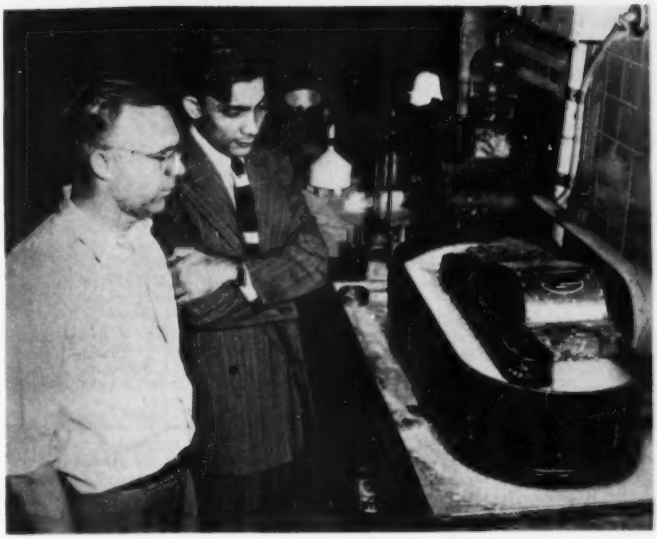
"One reason you have been with us so long," he continued, "is your ability to fit in with the company's scheme for producing results. As long as employes maintain that principle, the club will be the most enduring in this or any other industry."

"Life members will continue to enjoy rewards and this group will be going strong long after those who expect something for nothing are gone," he concluded.

The 35 year men who were honored: Wm. DeBruin, 46, Walter Van Eperen, 45, J. T. Doerfler, 44, Matt Kuborn, John Peerenboom, Martin Van Roy, 43, Geo. Coenen, John Lankvelt, 40, Theo Lamers, Bill Lang, Ed Wulterkens, 39, Robt. McCarsky, J. Verhagen, 38, Geo. P. Hammen, John Kettles, Henry Paalman, Peter Vanden Heuvel, John Van Zummeren, 37, Lawrence Dufrane Sr., Peter G. Lamers, John Peronto, Joe Sandhofer, Art Schnese, Theodore Van Lankvelt, Theodore Wachtendonk, 36, Martin Bressers, Mack Islinger, Martin Jansen, Mike Judkins, Henry Stuyvenberg, Thos. Vanden Boogaard, John H. Vanden Heuvel, Peter Van Sambeek, 35.

Rayonier Ups Dr. Russell

NEW YORK—Dr. Russell M. Pickens, technical sales director of Rayonier Inc, has been elected vice-president in charge of sales.



STUDENT FROM INDIA AT MANDO MILL

"India's greatest shortcoming not only in papermaking, but in all major industries, is the lack of experience and technical know-how," says Ra.ik Acharya (right, above) student from India who is studying chemical engineering at the University of Wisconsin, and who recently spent several days studying pulp and papermaking processes at the International Falls plant of the Minnesota & Ontario Paper Co. . . Mr. Acharya, 28, is among 1,000 young technicians studying in the U. S. at the present time under the auspices of the Indian government. . . The foreign study program of the Indian nationalist government, he said was established to fill a desperate need for engineers and technicians in a country that is aggressively striving for economic and social progress. . . His mentor, on his Mando visit was R. J. Burrock, chief chemist (left, above).

Kimberly-Clark Fellowships

NEENAH, Wis. — The Kimberly-Clark Corp. has established a graduate fellowship in economics at the University of Notre Dame for the school year 1949-50. The action broadens the base for the corporation's program instituted in 1946, hitherto held to graduate studies on subjects of interest primarily to the pulp and paper industry.

The corporation recently renewed grants for research fellowships at M.I.T., U. of Mich., and U. of Wis. and established a new one at Purdue; in chemical engineering, organic chemistry, physics, and forestry.

Contact for the new fellowship in economics will be maintained by W. H. Clifford, vice-president in charge of finance. Although Kimberly-Clark maintains such liaison and is generally familiar with the work being accomplished, it has no special claim on results and findings, which are published and made generally available as the school may determine.

Season Closes Waddington Dock

WADDINGTON, N. Y.—The Waddington pulp dock closed for the season on September 27. First ship to arrive at the dock this season was the Lea Cliffe Hall, on May 13. During the season there were 30 shiploads received, with cargoes totalling 30,700 cords, most of it for the St. Regis Paper Co. at Deferiet.

Newsprint Production Records

WATERTOWN, N. Y.—At the plant of the Great Lakes Paper Co. in Fort William, Ont., two Bagley & Sewall Co. fourdrinier newsprint paper machines recently made a record of 503 tons of 32-pound or standard newsprint in 24 hours for a two-machine mill.

Both machines are 20 years old. The larger of the two, 304 inches wide, was the largest paper-producing machine in the world at the time it was installed in 1929. Just before the last war a 316-incher was built in England, but is understood not to be in operation at this time.

The smaller of the two machines is 264 inches in width and was completed in 1928, having been installed in the mill at the beginning of 1929. By late March of that year this machine had made a world record production of 151 tons and 340 pounds of standard newsprint in 24 hours. Prior to that time the world's record was 147 tons on a 270 inch machine in the Gatineau mill of the International Paper Co. near, Ottawa, Ont.

The two machines together, in the recent world's record run for a two-machine newsprint mill, produced the 503 tons in 24 hours, and it is understood that the 304-inch machine had a record single-machine run in that period.

Both machines were operated at enormous speed, the 264-inch one producing 1,500 feet per minute and the 304-inch machine making 1,450 feet per minute.

Strathmore Advisory Council Meets

WEST SPRINGFIELD, Mass. — The Strathmore Advisory Council on September 13 ended a three-day meeting with management officials at the Strathmore Paper Co.'s home offices here and in Woronoco. Composed of 12 members the council represents 140 distributors of Strathmore papers thorughout the country.

The group was welcomed by George E. Williamson, president of Strathmore. Addresses were given by executives and department heads on sales, manufacturing, product development, service, advertising and sales promotion, and field sales reports. An address on Strathmore's national and interna- Kimball, president of the Abbott Kimtional reputation was given by Abbott ball Co., New York, Strathmore's advertising counsel.

Chemical Barging Contract Let

VANCOUVER, B. C.—Columbia Cellulose Co. has awarded a contract to the Coastwise Steamship & Barge Co., of this city (a subsidiary of the James Griffiths shipping interests of Seattle) to transport 15,000 tons of liquid caustic and chlorine chemicals annually from the Hooker Chemical Co. plant at Tacoma, W., to Colombia, new pulp mill being constructed at Port Edward, near Prince Rupert, B. C.

The chemicals will be transported north in barges purchased from the Canadian Transport Co. of Vancouver by the Griffiths interests. The barges were formerly used for log carrying and will be fitted with tanks to convert them to their new use.

Port Angeles Open House

PORT ANGELES, Wash.—The Crown Zellerbach newsprint plant here, held open house on September 28. Exhibits included displays of sustained logging procedure and salvaging operations in the local harbor. Arrangements were made to handle the school children during special hours. Guide service was handled by a joint committee made up of members of the two paper making unions. This was the second open house since the war. M. J. Otis is resident manager of the plant, which produces 130,000 tons of newsprint each year and employs more than 600 persons.

Hartford, Ind., Firms Featured

HARTFORD, Ind.—Featured in an illustrated story about Hartford in a recent issue of the *Indianapolis Star* were two local industries: the Hartford City Paper Co., and the Fort Wayne Corrugated Paper Co.

MICHIGAN STATE CHAMPIONSHIP WINNER

The Papermakers, baseball team of the Sutherland Paper Co., Kalamazoo, which has just won the Michigan state championship.

Crane Steam Boiler Building

DALTON, Mass.—Work has begun on a new high-pressure steam boiler at the Crane & Co., Pioneer Mill, where steam production for the Crane mills is being located in a central power plant. The boiler, which will manufacture steam at 450 pounds pressure, is expected to be completed by the year's end. Contractors have almost finished erection of steel work for the new boiler room. A 2,850-foot steam conduit to the Bay State Mill from the Pioneer Mill is under way, a company spokesman said, and is expected to be finished by November 1.

Colebaugh, AWWA Meet Speaker

VINCENNES, Ind. — David C. Colebaugh, Jr., technical representative of the West Virginia Pulp & Paper Co.'s nuclear research laboratory, Tyrone, Pa., addressing a round table district meeting of the American Water Works Ass'n., here on September 14, told his listeners that nature, rather than industry, causes most of the unpleasant tastes and odors in water. The ill-effects were caused mostly by plant growth, he said, adding that active carbon eliminates most of the tastes and odors.

Central's 50th Anniversary

MUSKEGON, Mich.—Central Paper Co., currently celebrating its 50th anniversary, was the subject of a full-page pictorial spread in a recent issue of the *Muskegon Chronicle*. Charles W. Smith, president, has been in that post at Central for 17 years. Oldest employe of the firm is Albert Zahrt, who helped lay the foundation of the first mill building in 1899 and who is now a plant guard. Second oldest is James Brow, turbine operator, who has been on the job for 45 years.

We Need Another Salesman

MENASHA, Wis.—Twelve new members of the Fox River Valley Sales Executive Club were addressed by Owen E. Lyons and R. J. Barton of the Marathon Corp. on September 21, at its first meeting of the season. "We Need Another Salesmen", was the subject taken up by the group, which meets to discuss sales administrative problems.

Union's Butler to New York

NEW YORK—John Butler, Union Bag & Paper Corp., corrugated container salesman in the Southeastern territory, has been called to New York where he has been given a special sales assignment. Prior to joining Union in 1947, Mr. Butler was with the Container Corp., of America in a sales capacity.

Bardeen Municipal Nominee

KALAMAZOO, Mich. — Maxwell Bardeen, president of the Lee Paper Co., Vicksburg, Mich., was named on September 22, in a nominating petition for city commissioner of Kalamazoo. Mr. Bardeen was the first president of the Kalamazoo Safety Council.

Stansfield Heading Home Sept. 30

BOSTON—Ernest Stansfield, director of Edwin Butterworth, Ltd., Manchester, Eng., who has been in the U. S. for a month, visiting E. Butterworth & Co., Inc., paper stock, will sail for England September 30, on the Parthia.

Fry Named to C.C. of U.S. Post

WEST READING, Pa.—Samuel R. Fry, president of the Wyomissing Glazed Paper Co., has been named a member of the transportation and communication department committee of the Chamber of Commerce of the United States.

Powell River Co. Open House

POWELL RIVER, B. C.—Powell River Co. recently held "open house" at its pulp and paper plant here. Over 500 residents and their friends toured the property during the afternoon and evening.

Scott's Growth Sketched

HOBOKEN, N. J.—Growth of the Scott Paper Co. was traced for members of the Hoboken Rotary Club, on September 14 by Rod Sears, of the Scott plant local.

FORESTRY

Six FPRS Regional Meetings

MADISON, Wis.—A series of meetings of forest products men has been scheduled for all parts of the country by the local sections of the Forest Products Research Society. The meetings are open to non-members as well as members of the FPRS. They are set for the following dates:

October 7. Midwest Section Fall Meeting, Furniture Club of America, American Furniture Mart, Chicago. "Cost Reduction" will be the general subject of the meeting with papers on "Value of Dimension Studies in Relation to Net Lumber Cost," "Waste Utilization in Timber Manufacturing," "Case Study of Internal Controls and Cost Accounting" "Casualty and Safety Insurance as a Factor in Overhead," and a panel on "Quality Control" including "Theory, Tools and Application of Quality Control to Statistical Woodworking," "Merchandiser's Viewpoint of Quality Control," "A Case Study of Quality Control," and "Management Engineer's Viewpoint of Statistical Quality Control." The luncheon speaker will discuss "Technical Publicity" and the speaker at the evening banquet will review the present and future forest products resources of this country.

October 25. Pacific Northwest Section Fall Meeting, Central Library Hall, Portland, Ore. The program will be of a general nature with technical papers on a variety of topics of current interest. The meeting will be followed by a banquet at the Mallory hotel.

October 27. First technical meeting of the Deep South Section will be held in New Orleans. Papers will be presented by members of the Texas Forest Service on "Results of Chemical Seasoning Studies on Oak and Gum" and "The Variability of Extractives in Southern Yellow Pine Wood." The Chicago Mill & Lumber Co., will offer a paper on its Craveneer development and there will be a variety of other papers.

October 31-November 1. Northeast Section Fall Meeting, Hotel Statler, New York. On the morning of October 31 there will be papers on "Integrated Utilization of Wood Products," "Wood and Paper as a Combination Material," and "Fiberboard for Shipping Containers." A panel on imported woods will be presented on the afternoon of October 31. Papers scheduled for the morning session on November 1 include "How Moisture is Held in Wood," "Movement of Moisture in Wood," "Fiber Saturation Point," and "Shrinkage and Drying Stresses." The afternoon of November 1 will be broken up into discussion groups concerned with "Seasoning of Wood," "Blues and Gluing," "Material Handling," and "Wood Finishes." There will be the usual Paul Bunyon Bar and group dinners on the evening of October 31.

November 4-5. Virginia-Carolinas Section Fall Meeting, Student Union building, Duke University, Durham, N. C. The Washington Duke Hotel will be the meeting headquarters. Papers planned for the morning of November 4 include "Collection and Disposal of Wood Waste," and "Wood Waste as a Soil Conditioner." The afternoon session will feature a panel discussion on "Experience in—and Possibilities for—Using Wood Waste." Subjects to be discussed are: "Wood Waste Used for Fuel," "Wood Waste Used for Synthetic Boards," "Chemical Use of Wood Waste," "Use of Mill Ends and Other Waste for Manufacture into Small Products," "Use of Sawdust, Shavings, Chips, and Wood Flour." A banquet will be held at the Washington Duke hotel the night of November 4. Field trips have been arranged for the morning of November 5, including a visit to the Duke University wood laboratory.

November 4. Northern California Section Fall Meeting, Auditorium, San Francisco. Five technical papers are planned including "Uses of Redwood in the Chemical Industries," "Surface Coatings and Preservatives for Wood," and "Use of the Electron Microscope in Revealing Wood Cell Wall Structure."

MISSOURI TREE FARM

Eminence, Mo.—The American Tree Farm System added the 25th state to its program on September 9 when Missouri dedication ceremonies were held near this city in Shannon County. . . State Forester George O. White, who addressed the more than 100 foresters, conservationists and local landowners who attended the meeting, pointed out that four out of every ten acres in Missouri are best suited for forest crops. Forest production in the state is estimated at 60 million dollars annually. . . The dedication ceremony was held in connection with the annual meeting of the Ozark Section of the Society of American Foresters. L. E. McCormick, extension forester (at left in photo), presented the Tree Farm certificates. . . AFPI Chief Forester James C. McClellan (right) explained the national Tree Farm program and reported that the number of Tree Farmers now totals nearly 2,000.

Hunt, Peninsula Conference Speaker

ESCANABA, Mich. — The possibilities offered by research for more profits from the region's forest resources were pointed out by George Hunt, director of the Forest Products Laboratory, Madison, Wis., at a meeting of the Upper Peninsula Forest Conference on September 13.

The total amount of low grade cull and waste wood from the lumber regions of the upper peninsula are vast. Mr. Hunt told the conference that the potential source of new factories, increased payrolls are inherent in the region's timber resources. He cautioned, however, that while it is easy to make various products from wood wastes, it is not always easy to make money and stay in business. "You have to make things that sell, and also get out and sell," Mr. Hunt said. "Good business management and good salesmanship are always necessary for success."

Hemlock, aspen, jackpine and balsam, of the upper peninsula are suitable for pulp and fiberizing products, Mr. Hunt asserted. Even maple, beech and birch can be made into paper. Corrugating boards can be made from the semi-chemical pulps of upper peninsula hardwoods. Mr. Hunt said Michigan, alone, offers a large market for these products.

Upper peninsula hardwoods can be utilized for high alpha cellulose pulps in the production of rayon. Coarse papers for roofing felts can be processed from woods and mill wastes.

Mr. Hunt warned the conference to be wary of fake promoters who pretend to have developed new processes for

fiber board. Some communities have already lost money to these men.

"I think that the manufacture of fiber products is one of the outstanding hopes for using low grade woods in the upper peninsula," the speaker said. "We can make fiber box and wall boards out of all kinds of junk."

A half million dollar board plant is being erected in Duluth using aspen. Forty percent of the timber supply in the Great Lakes area is aspen.

Krug Authorizes Timber Sales

PORTLAND, Ore.—J. A. Krug, secretary of the interior, has authorized the bureau of land management to sell timber from the public lands administration by the bureau of reclamation. In the Pacific Northwest the order will affect timber in Oregon and Idaho on which application for purchase has been made as well as for future "withdrawal" areas, according to Daniel L. Goldy, the land management bureau's northwest administrator. Included is timber east of Klamath Falls near La-Pine Ore. and the Garden Valley project north of Boise. Estimated value is $300,000.

Mr. Krug said private purchasers have up to this time been unable to obtain timber resources on reclaimed land because of lack of authorization to conduct sale negotiations. Congress two years ago authorized sales of timber and other public lands. Mr. Krug's order delegates authority of reclamation timber sales to the land management bureau of timber. Parcels amounting to $1,000 or more will be sold at competitive bidding. Receipts will go into the reclamation fund.

Mr. Goldy said the staff here and the northwest regional office of the reclamation bureau at Boise are working on plans for disposal of other timber in "withdrawal" areas. The amount of timber to be sold will be determined later. Withdrawal areas, he explained, are those which the reclamation bureau has withdrawn from the public domain for reclamation projects, either dams or irrigation.

Gifford Pinchot Forest Dedication

WASHINGTON — Gifford Pinchot National Forest in the State of Washington (formerly Columbia National Forest) will be dedicated October 15 under joint auspices of the Forest Service, U.S. Department of Agriculture, and Society of American Foresters, which is holding its annual meeting in Seattle during the same week. The dedication will occur under the trees at La Wis Forest Camp where a memorial plaque to Mr. Pinchot will be unveiled. Mrs. Gifford Pinchot, his widow, and Dr. Gifford Bryce Pinchot, his son, will attend. Also participating will be Gov. Arthur B. Langlie of Washington; Lyle F. Watts, chief of the U. S. Forest Service; Clyde F. Martin, president of the Society of American Foresters; H. J. Andrews, U. S. Regional Forester for the Pacific Northwest; and K. P. Cecil, supervisor of the forest.

IP Foresters Meet

FORT MORGAN, Ala.—Ninety top foresters of the Southern Kraft Division of *International Paper Co.* opened a three-day meeting at Fort Morgan Inn on September 20.

The meeting was called by Earl Porter, manager of the company's woodlands department, for discussion of general woodland policies and exchange of ideas.

Chief among subjects discussed was the company's over-all conservation program to aid private land owners.

The program was arranged by Mr. Porter, S. E. Fogelberg, chief forester, and R. S. Andrews, chief forestry engineer of the company.

Men participating in the discussions handle company-owned lands in North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas and Texas. They also purchase wood necessary to operate company mills at Mobile, Georgetown, S. C., Panama City, Fla., Moss Point, Miss., Springhill, La., Camden, Ark., and two mills at Bastrop, Louisiana.

The discussions included activities in forest management to maintain the most intensive practices known at this time. Papers covering IP's activities in the South will be presented.

This is the second such meeting held by the woodlands division and is the largest ever held by foresters employed by a private concern.

Douglas Fir Seed Crop Fails

VANCOUVER, B. C.—The crop of Douglas fir seed in British Columbia this year was a failure according to H. G. McWilliams, forester in charge of reforestation. The crop failure while serious, will not cripple reforestation projects as a reserve supply sufficient for several years is kept on hand to assure two year old seedlings for the annual planting of ten million trees.

Six camps are operating at present, preparing areas for planting next spring. Most of the work consists of felling dead trees and protection work. The new nursery, still in an experimental stage, at Elko, is showing great promise, although more work will be necessary before foresters are able to determine ideal conditions for the pine seedlings, it is stated.

Howard Ferguson Tree Nursery

OTTAWA—Premier Leslie Frost of Ontario states that the new tree nursery at the forestry station near Kemptville would be named the Howard Ferguson Nursery as "a living memorial to the work and memory of a great man." The late Hon. Howard Ferguson was Premier of the province for many years.

Turning to Douglas Fir

PORTLAND, Ore. — West Coast pulp mills, which in the past have been mainly hemlock operations with some white fir and Sitka spruce mixed in, are turning more to Douglas fir, J. M. McEwen of Weyerhaeuser's pulp division research department at Longview, Wash., said during a visit to this city in mid-September.

Douglas fir heartwood isn't too satisfactory for sulphite pulping, but the industry is looking forward to bigger supplies from thinning operations in second growth and in re-logging salvage of logging waste, Mr. McEwen added.

Free Pine Tree Seeds

WINNFIELD, La.—Ten thousand packets of pine tree seeds, complete with planting instructions will be distributed free of charge at the second annual Louisiana State Forest Festival to be held here September 21-24, according to W. C. Postle, general chairman, of the event.

Ironwood Logging Conference

IRONWOOD, Mich.—The Wisconsin-Upper Michigan Timer Producers' Ass'n., and similar groups in Minnesota and other lake states held their Fourth Annual Logging Congress, September 22-25. The biggest array of logging machinery and materials ever exhibited in this vicinity was on view.

Schultz Adds Log Sales Div.

VANCOUVER, B. C.—C. D. Schultz & Co. has added a log sales division to its forest management service. The new department will be headed by Norman B. Scott, head timber cruiser for the company, and formerly with the B. C. Forest Service.

ASSOCIATIONS . . .

New Group's First Meeting

CLEVELAND—October 7 has been set as the date for the first meeting of the newly organized Lake Erie Papermakers and Converters Ass'n. (See *Paper Trade Journal*, August 25 issue, page 22). The meeting will be held at six p.m., at the Hickory Grill, 929 Chester avenue.

Subject of the meeting will be "Paper and Paperboard Finishes". Speakers are: Paul J. Thoma, consulting engineer, whose topic will be "The Inkmaker's Viewpoint"; P. C. Plehn of the Consolidated Paper Co., who will present "The Boardmaker's Viewpoint"; and E. E. Thomas of the Appleton Machine Co., who will present "The Machine Builder's Viewpoint". In the ensuing discussion period there will be opportunity for free expression of ideas on the problems confronting mills, converters and suppliers, alike.

"Birth Committee" of the new group includes: Bill Manor of the Consolidated Paper Co., Monroe, Mich.; Pete Spring of the Chase Bag Co., Chagrin Falls, Ohio; Bill Schoenberg, 1200 West Ninth street, Cleveland 13; and Lew Burnett of the Ohio Boxboard Co., Rittman, Ohio.

Reservations to date indicate an impressive attendance total, Mr. Burnett reports to *Paper Trade Journal*.

NPTA Fall Meeting

CHICAGO — Attendance at the Fall meeting of the National Paper Trade Ass'n., at the Stevens hotel, September 27-29, exceeded expectations, and the atmosphere of the gathering, despite rail and coal strike clouds, devaluation of the pound sterling and Russian atom fission, was one of optimism tempered by the knowledge that the days of skilled merchandising are again here.

September 26 was given over to registration and a meeting of the executive committee. The morning of the 27th saw meetings of the Fine Paper Commodity Committee and Wrapping Paper Commodity Committee. Both of those groups also held meetings in the afternoon, as did the Local Ass'n., Secretaries and the Advisory Council. In the evening there was a meeting of the board of directors.

The morning of the following day (September 28) was occupied by a general meeting, with L. A. Ramaker of the Bouer Paper Co., Milwaukee, president of NPTA, presiding. The mayor of Chicago welcomed the gathering to the city; Rep. Frank B. Keefe of Oshkosh, Wis., spoke; and Selig G. Levitan presented a "Review of Legal Matters." In the afternoon there was a Fine Paper Division meeting, with E. P. Magel of the Crescent Paper Co., Indianapolis, presiding. Carl E. Dunnagan, president of the Printing Industry of America, Inc., and Stanley O. Styles, who recently joined the NPTA headquarters staff, spoke: Mr. Magel read the "Report on Fine Paper Commodity Committee," and J. H. Londergan of the NPTA headquarters staff discussed "Know Your Costs."

On the final day of the meeting (September 29) Lawrence S. Pollock of the Pollock Paper Corp., Dallas, Texas, who is vice-president of the Wrapping Paper Division of NPTA, presided at the meeting of that group: Dernell Every, secretary-treasurer of the Kraft Paper Ass'n., New York, spoke on "The Outlook for Kraft Papers"; J. E. Goodridge delivered the "Report of Wrapping Paper Commodity Committee" and Mr. Londergan presented various statistical reports.

In the afternoon of the closing day President Ramaker occupied the chair at the business meeting, which heard the reports of the directorate and executive secretary, W. G. Leathers; heard the year's necrology read, and the report of the Traffic Committee, delivered by R. W. Campbell. At this meeting Rep. J. K. Javits (N.Y.) was a speaker.

Eighty firms exhibited papers, converted products, cordage and twine — one-third more than exhibited at any previous affair of the kind.

Paper Demand Recovers

NEW YORK—After a decline from the post war peak of last October's paper and board production to the post war low of July, the month of August saw a sharp reversal, the American Paper & Pulp Ass'n., reported on September 22. "Production shot up sharply to the highest monthly production this year. Inventories are pretty thoroughly liquidated and current demand is more closely related to actual consumption of paper by the 150 million consumers comprising the population of the United States.

"The upturn apparently started with a slight upswing in June, for the order backlog started to build up then. The upswing was countered by the seasonal drop in July which derives from the periodic shut down for repairs and vacations as provided in union contracts. But the order backlog (unshipped orders) continued to build up during July and has increased steadily since then.

"It would appear that inventories in the hands of merchants, converters and consumers had reached a low point in June and that, during July, mill shutdowns had interfered somewhat with inventory replenishment. The August sharp upswing in production resulted from the accumulated replenishment orders.

"The fall seasonal upswing is apparently in full operation and may be expected to carry at least through November unless serious strikes in coal and steel should occur."

New Officers for Ohio Supt's.

HAMILTON, Ohio — The Miami Valley Division of the American Pulp & Paper Mill Superintendents Ass'n., Inc., has announced election of these officers for 1949-50: Kon Matchuk, Maxwell Paper Co., Franklin, chairman; John Burdsall, Crystal Tissue Co., Middletown, first vice-chairman; Edward Bindley, Cheney Pulp & Paper Co., Franklin, second vice-chairman; and Charles Moore, Maxwell Paper Co., Franklin, secretary-treasurer.

The election took place on September 16, during the annual fall meeting of the Division which was held at the Elk Country Club.

A highlight of the meeting was a short address by Charles Reese of the Nekoosa-Edwards Paper Co., Port Edwards, Wis., national president of the Association, on some of the immediate plans and aims in the Association program.

Another event was presentation of a certificate of life membership in the Association to Robert Engelhardt. This presentation was made by Harold C. Leighton of the Beckett Paper Co., Hamilton, Ohio, outgoing chairman of the Division.

Among the 142 members and guests in attendance were: Homer Latimer, Champion Paper & Fibre Co., Hamilton; Howard Harrison, Crystal Tissue Co., Middletown; and Roy Zellers, Chillicothe Paper Co., Chillicothe. All of these men are past presidents of the national organization.

Golf prizes were given by the Black-Clawson Co., Hamilton.

Two Red Lion Inn Meetings

STOCKBRIDGE, Mass.—The New England Section of TAPPI will open its 1949-50 season with a meeting at the Red Lion Inn, September 30. Dinner will be at 7:00 p.m. Theme of the meeting will be "Tubsizing".

The following speakers will each give ten-minute talks to be followed by a panel discussion: R. A. Gale, Pillsbury Mills, Inc., "Enzyme Conversion"; P. B. Holden, Stowe Woodward Co., "Equipment"; J. Newton, Clinton Co., "Starches"; R. Pattison, Cellulose Fibres, Inc., "Practical Mill Problems"; and O. Steffens, Penick & Ford, Ltd., "Starches".

The Connecticut Valley Superintendents' Ass'n., will meet at the Red Lion Inn on October 1. Their program is as follows: 11:00 a.m.—Meeting on "Material Handling". Speakers: W. Butler, consulting engineer; Martin Fouche, Lewis-Shepard Co.; and P. McBannon, Sighoid Steel Strapping Co. Afternoon—Golf tournament—Prizes and competition for trophy offered by Bob Pattison; 7:00 p.m.—Banquet and Dance.

Five New NAWMD Members

NEW YORK—Five firms were unanimously elected to membership in the National Ass'n., of Waste Material Dealers, Inc., at the recent meeting of that group's directorate, Clinton M. White, managing director, reports. The five are: Dreyfuss Paper Stock Co., Kalamazoo, Mich.; Goldsboro Iron & Metal Co., Golsboro, N. C.; F. W. Harris (Birmingham), Ltd., Birmingham, Eng.; Hugo Neu Corp., New York, and Rutgers Metal Co., Brooklyn, N. Y.

Fox Valley — Lake Shore Meet

MENASHA, Wis.—E. G. Amos, secretary of the industrial relations committee of the American Pulp & Paper Ass'n., spoke at the pulp and paper section panel in connection with the Fox Valley and Lake Shore Safety Conference on September 21.

Arthur Homblette and Clarence Elmgren were co-chairmen for the pulp and paper industry safety panel. Attendance at the gathering approximated 200 persons.

N. E. Merchants Romp

WORCESTER, Mass. — More than 100 members attended the annual outing of New England Paper Merchants Assn. Inc., at Wachusett Country Club on September 15. Frederick R. Profit was general chairman.

The day-long event was highlighted by two banquets and athletic contests.

Meek, Western SAPI Speaker

CHICAGO — Joe T. Meek, executive secretary of the Illinois Federation of Retail Ass'n., will address the first Fall open meeting of the Western Division of the Salesmen's Ass'n., of the Paper Industry at Hotel Sherman on October 10.

MISCELLANY . . . .

Canada and Devaluation

By CHARLES H. L. REID

TORONTO—Perhaps by the time this appears in print the position of the Canadian pulp and paper industry under the new monetary exchange rates will be clearer. In the meantime, newsprint producers take the view that currency devaluation will not have much effect on their competitive position in the United States or other markets.

The most important factor, from the standpoint of industry earnings, is, obviously, the ten percent premium which manufacturers will get from export sales. That could mean as much as $10 millions to the industry here for the balance of this year. That is, if the present price of $100 a ton (U.S.) remains undisturbed.

There have been reports that Swedish newsprint already has been offered at $20 below the contract price. Scandinavian newsprint was able to find a market in the U.S., before devaluation, at $100 a ton, so it is argued that there is no reason for Scandinavian producers to cut prices at this time. Although they will have an advantage under the new exchange rates, the tonnage available from this source is not enough to have an important effect on Canadian newsprint sales. It is generally felt that the level of U.S., demand for Canadian newsprint is a much bigger factor in the newsprint picture than currency valuation. If competitive conditions demand it, newsprint manufacturers here could cut prices nearly ten percent and still be as well off from an earnings standpoint as they were before any change in the exchange rates.

While devaluation of the pound sterling has increased the price of Canadian newsprint to sterling purchasers it is felt that most of these countries have already cut their orders to an extremely low level. Devaluation will mean, however, that Scandinavian newsprint will be in a better competitive position in sterling areas, but these countries are not able to meet the demand for newsprint even in those areas. There is still the suggestion that Canadian manufacturers of newsprint may cut their prices to customers in the sterling markets.

Some talk is heard of a possible cutback in production of Canadian newsprint mills as a direct result of the changed conditions due to the new exchange rates. This cutback, it is stated, could be enough to bring the mills to 95 percent of capacity. Any such cutback, however, if and when it happens, will more likely be because of a slowing in demand than as a result of Scandinavian competition or a lowering of sales figures because of exchange rates. Devaluation of the Canadian dollar may even help offset any modest decline in production.

Canadian woodpulp, however, will definitely be in a less favorable position following devaluation of the pound and other currencies. It will be at a competitive disadvantage in both sterling and dollar markets against Scandinavian pulp. Canadian pulp will have a ten percent advantage over U.S., pulp producers in the U.S., market and other markets.

British Columbia pulp producers have been among the leaders in reducing prices over the last few months, but now the Scandinavians will be in a better position to do so. Despite the highly competitive conditions, however, the Scandinavian pulp producers may sit tight. European countries are still as eager as ever to earn as many U.S., dollars as possible and this may be a restraining factor against price cutting. There does not seem to be any reason why they would want to accept lower prices than market conditions demand. Competition being what it is, however, it is possible that both Canadian and European producers of woodpulp will take whatever advantage they can from currency devaluation. Canadian producers are likely to encounter difficulties in selling in United Kingdom and European markets, but should be able to hold their own in competition in the U.S.

Considering the over-all results of the devaluation of currencies it would appear that there is nothing in it likely to stimulate pulp production in Canada at this time.

Canadian timber producers and traders have a much brighter outlook towards devaluation. They seem to feel there will be no damage to their industry and that there is a possibility of some benefits flowing from it. Despite the fact that the new exchange rates mean to them, in effect, a 25 percent rise in Canadian prices, British and other sterling buyers are said to be talking about placing new orders. The feeling in the timber trade here is that the United Kingdom devaluation will prove to be successful and that British producers will be able to export so much more than is required to offset the change in the money value that they buying in hard currency countries will hold steady or even increase in some instances.

Canada Evaluates Devaluation

By M. L. S. SCHWARTZ

OTTAWA—The immediate reaction to the devaluation of the pound sterling and the Canadian dollar is the belief here that no long-range forecast can be made about the likely effects on the pulp and paper industry on account of some unknown factors, though in the period immediately ahead there may be more adverse effects on the pulp trade than on the paper transactions.

It is already feared that more business in the British Commonwealth may be lost through the devaluation action. At least, it is known that orders from this source are being held up, even when there was relative certainty prior to the devaluation announcements that such business would be forthcoming. Whether this business from some Commonwealth customers is lost or not is uncertain at the moment but cables have come to Canada requesting shipments to be held up in some instances until the situation is clearer. Now, it is predicted that in any case this may be a contraction of trade in the making.

Another reaction here is the interpretation being given to Sir Stafford Cripp's statement on devaluation. He assured the British people that their savings, wages and salaries would buy as much as they did before of things produced in the United Kingdom "or that we buy from other countreis who make similar changes in their dollar rate of exchange. "In other words, speculation here is that apparently the British leader is anxious to bring a general levelling-off in world prices which work against the United Kingdom insofar as certain essential supplies needed by the United Kingdom are concerned. This could mean that lower Canadian prices would help considerably to stimulate or to retain business in the British market. However, present production costs in Canada may not warrant such cuts, though time alone can answer this question. In any case, it appears as a possible problem.

Insofar as the United States market is concerned for products of the Canadian pulp and paper industry, the Canadian devaluation of the dollar is not expected to bring any marked effects on sales. At least, this is the viewpoint heard here, though there may be some adverse effects on the pulp business, particularly if alternative, cheaper sources turn up to compete for this business.

The significant point about the entire devaluation program is that no one in authority seems anxious to make anything but short-term forecasts.

What is being emphasized at the moment is that the Canadian pulp and paper industry has been the really big earner of American dollars and there is a possibility now that this will continue to be the case for some time to come. Newsprint exports to the United States so far this year are running at a satisfactory rate, it is said, though woodpulp and various other products are declining. Newsprint shipments to overseas markets, however, are down by about six percent or seven percent from last year, with such shipments to some overseas markets being lower by almost 30 percent to 50 percent. This means that somehow the American market has been able to accept more newsprint which has been made available by the loss of other markets. But this is not true of pulp shipments where cuts in overseas business are being accompanied by reports of shrinking prospects in the Western Hemisphere for such exports from Canada. Likewise, exchange problems are reportedly cutting down business for exports of fine and other types of paper to sterling areas, with this implying possible losses in such trade within the Commonwealth countries, though basically this part of the industry in Canada

may not be affected seriously because it is founded basically to serve the Canadian market rather than outside markets.

All in all, the pulp and paper industry of Canada is not likely to be affected to the same extent by the devaluation of the pound sterling or the Canadian dollar as some other Canadian industries, with the industry as a whole continuing to be the top earner of American dollars, particularly on account of current newsprint production and shipments.

APPA Weighs Devaluation

NEW YORK—Devaluation of European currencies came as no surprise to the paper industry. The changes, particularly in the currencies of the Scandinavian countries, have been expected for several months, the American Paper & Pulp Ass'n. stated on September 22.

"Previous discussions as to the possible change were in the range of 20 percent to 25 percent. To that extent, the actual decline of 30 percent in the British pound and the Scandinavian currencies was a surprise to the paper industry, as well as to the rest of the world.

"Thus far, the more important Northern European pulp producers have made no announcement concerning any changes in fourth quarter contract pulp prices in the United States market. It is understood, however, that some Northern European pulp producers desire to make no change at this time, claiming that the devaluation had been discounted by the successive declines of their pulp prices since the first of the year.

"In 1948, domestic contracts for bleached sulphite were at $126 to $135 per ton, delivered. Northern European pulps of similar grades, ranged from $165 to $195 c.i.f. Atlantic Seaboard. At the present time, domestic contracts for bleached sulphite, as well as shipments of Canadian and Scandinavian bleached sulphite, are listed by trade papers at about $118 delivered to paper mills.

"Import of all grades of pulp from Northern Europe during the first half of 1949 accounted for 10 percent of all market pulp sold in this country, and, in the same period, comprised only 2 percent of the total consumption of pulp in the United States."

Devaluation and Newsprint

NEW YORK — When news of the revaluation of the Canadian dollar to $1.10 in Canadian money for $1.00 U.S., Cranston Williams, general manager of the American Newspaper Publishers Ass'n., wired the International Paper Sales Co., Montreal, and the Abitibi Power & Paper Co., Toronto, as follows:

"Our *Newsprint Bulletin* No. 40, July 15, 1946, carried text your notice to customers increasing base newsprint price $6.80 per ton in view of Canadian dollar being placed on par with United States dollar. In view of Canadian government action yesterday restoring ten percent difference between Canadian and United States dollars please wire what action your company contemplates with respect to newsprint price for all United States destinations."

E. L. Crooker of International Paper Sales, Inc., has replied as follows: "Reference action described your bulletin July 15, 1946, this occurred at a time when newsprint price had been artificially restrained by government and when not only the change in Canadian exchange but all other factors clearly and urgently called for upward price revision. Today widespread currency devaluation threatens to jeopardize all of our overseas markets and will undoubtedly affect manufacturing costs to an extent not now ascertainable. Accordingly we are not taking any price action."

D. W. Ambridge, president of Abitibi, has replied as follows: "You will remember that at the time of the increase in 1946 to which you refer there was pending for OPA decision an appeal for an increase in price which had been supported by the publishers. The situation today does not contain the same elements which were important in 1946. You will agree that a world made move in devaluing currencies for the purpose of raising the level of world-trade requires for its success the unqualified support of every section of the commercial world which can help to make it so the devaluation of currencies does not mean that United States consumers of newsprint will pay any more for their supplies than the entirely equitable price which they pay now. Under these circumstances we do not contemplate any action."

Canadian Labor Picture

TORONTO—Canadian pulp and paper manufacturers seem to have set some sort of record for peaceful negotiations with their 50,000 workers in the 90 mills across Canada. Men who work in Canada's pulp and paper industry are the highest paid wage-earners in the country with the exception only of the running trades. They work an average of 48 hours a week for 50 weeks a year and produce 800 varieties of pulp, paper and board, amounting to about $2 million worth every day. The high scale of wages has been negotiated amicably. As an example, Abitibi Power & Paper Co., signed a contract with its workers which was (the 33rd) and while there have been hard-fought battles between management and negotiating committees at times, there has never been a strike.

From 1939 to 1948, wage rates went up 93.5 percent; in the paper box industry they were up 102.3 percent. In newsprint mills, machine tenders were getting as much as $2.44 an hour. The average rate was $2.15, making this one of the highest paid occupations in Canadian industry. Basic rate for unskilled labor was $1 an hour. Most of the workers put in a six-day, 48-hour week. They got double time-and-half on statutory holidays, of which there are six under this year's contract. All but two of the mills give vacations with pay, starting with a week for a year or less service and going up to three weeks for 20 year's service. All but 5 percent were getting two weeks. Moreover, all but eight of the mills had some form of collective agreement in writing, covering 95 percent of the working force. Most firms had agreements with either the AFL, IBPS & PMW or the IBPM, or both; also with the independent International Ass'n. of Machinists, AFL Electrical Workers or Operating Engineers. All but the Machinists are affiliated with the AFL and the Trades and Labor Congress of Canada.

South's Paper Industry Appraised

ATLANTA—Total value of mills producing various paper products in the south is estimated at more than $1,210,000,000, in the current *Bankers' Farm Bulletin* of the Federal Reserve Bank of Atlanta.

It is estimated further that asset value of timber and land of timberland owners who sell stumpage to mill contractors in the region is $200,000,000.

The figures contained in the bulletin cover mills that produce two-thirds of the South's paper products.

These plants employ some 62,250 workers, with an additional 3,787 office employes. The over-all gross annual payroll is $190,000,000.

The paper mills have a capacity of 19,500 tons daily, with gross annual sales averaging $822,000,000. Some 9,000,000 cords of wood are used annually.

Wood dealers in the region number 1,327, with the number of independent wood dealers estimated at 61,500.

It is believed that the plants will operate perpetually in their present locations. The gross annual taxes paid in 1948 amounted to $84,000,000, and the gross investment in the South is $624,000,000.

These figures, as given in the bulletin, were supplied by James H. Allen, vice chairman of the St. Regis Paper Co.

In other comment, it was pointed out that there are 200,000,000 acres in the South which, with average good forest management, will raise at least 100,000,000 cords of wood annually for the pulp and paper business.

Direct Mail Contest Winners

CHICAGO — Best direct mail advertising campaigns of the year, produced by firms throughout the United States and Canada, received recognition at the opening of the 32nd annual conference of the Direct Mail Adversising Ass'n., at the Congress hotel, Septem-

ber 21. Presentation of "Best of Industry" and "Merit" awards was made by Herb Buhrow, chairman of the committee of contest judges.

Adjudged the 1949 "Best of Industry" direct mail leaders in the realm of paper were:

Building Materials — Flintkote Co., New York; L. Rohe Walter, director of public relations. Celotex Corp., Chicago; Gates Ferguson, advertising manager.

Envelope Manufacturers—Mail Well Envelope Co., Portland, Ore.; Herbert J. Darby, vice-president and general manager.

Paper Manufacturers — Mead Sales Co., Dayton, Ohio; Hubert S. Foster, advertising director.

Paper Specialties — Dennison Mfg. Co., Framingham, Mass.; R. J. Cullen, editor. (Batten, Barton, Durstine & Osborn, Boston, K. M. Spence, account executive.)

Winners of 1949 Merit Awards included:

Paper Manufacturers—Mohawk Paper Mills, Inc., Cohoes, N. Y.; George M. Robinson, advertising manager. West Virginia Pulp & Paper Co., New York; C. P. Elston, advertising manager.

Canadian Revenue Frt. Loadings

OTTAWA — Revenue freight loaded on the Canadian railways during the week ended September 10 showed car loadings of woodpulp and paper as 3,038 cars as compared with 3,522 cars in the preceding week and 3,345 cars in the similar week of last year.

The Eastern Division accounted for 2,652 cars in the week ended September 10 as against 3,087 cars in previous week or 2,895 cars in the same week a year ago, with the Western Division dropping to 386 cars in the week ended September 10 as compared with 435 cars in the preceding week and 450 cars in the similar week of last year.

Such car loadings on the Canadian railways of woodpulp and paper from the first week of 1949 until the week ending September 10 showed a cumulative total of 140,109 cars as compared with 152,799 cars in the similar period of last year, with the Eastern Division showing 122,349 cars this year as against 133,571 cars a year ago and the Western Division 17,760 cars this year as compared with 19,228 cars last year in similar period.

No Rehearing Time Limit

MADISON, Wis.—The State Committee on waste pollution has been advised by Attorney General Thos. E. Fairchild that there are no time limits for rehearings on the recent pollution clean-up orders for the Fox River Valley.

Some weeks ago pulpaper mills and other industrial establishments were ordered by the committee to reduce pollution in the Fox River. Because the legislature was making changes in the pollution laws at the time, the attorney general was asked for a ruling on time limitations for appeals from those orders.

There have been no formal indications by the defendants that they will contest the order; however, L. F. Warwick of the committee, asserted that he had the impression through private conferences that there may be requests for rehearings for adjustments of its terms. A preliminary report of compliance plans is due next December 31.

Canada's Pulp Industry Too Big?

WASHINGTON — A question as to whether the domestic and Canadian pulp industry has over-expanded, in the light of present demand, has been raised by the Department of Commerce. In a review of the situation confronting Scandinavian shippers, the report said: "Clear indications at this time are that United States and Canadian pulp producers may have overestimated the productive capacity which could be built without running into ultimate oversupply.

"While the problem of overproduction was considered to be most critical in 1921, 1930 and 1938, nonetheless, many North American manufacturing circles argued, immediately after World War II, that increased world population, plus increased per capita consumption of paper and paper products, could sustain all of the pulp and paper manufacturing mills that could possibly be constructed in 1945-48.

"Present indications are that estimates may have been made without sufficient consideration of whether this increased world population would have the money with which to buy more pulp and paper.

"Partly overlooked was the fact that per capita consumption in 1945-48 actually embodied a tremendous amount of waste. Many families which had traditionally been satisfied with one Sunday newspaper, having money available, increased their purchases to two or more; the person who had previously been content with one weekly magazine, tended to purchase several only skimming favorite sections of each.

"These excessive purchases however, are generally the first to disappear when wages show signs of decreasing or unemployment appears. These purchases thus are an extremely misleading yardstick for gaging total consumption."

U. S. Metals to Canada

OTTAWA—Imports into Canada from the U. S. during June this year included, for repair of pulp mill digesters, the following, with figures for the January-to-June period being given in brackets, the Canadian Government reports: Hot finished, carbon, nil (66) tons; Seamless 12" and under in diameter, Cold Drawn, carbon, 819 (4,098) tons, alloy, 26 (174), stainless, 10.3 (117.6); Hot Finished, carbon, 566 (3,164) tons, alloy, 2 (43); Seamless, over 12" in diameter, Hot Finished, carbon, 244 (662) tons, alloy, 10 (10); Welded, 4" and under in diameter, carbon, 2,898 (13,819) tons, stainless, 2.5 (12.7); Welded, over 4" in diameter, carbon, 530 (2,897) tons, stainless, nil (.1).

Water Pollution Control Comm.

HARTFORD, Conn.—The New England Interstate Water Pollution Control Commission composed of members from Massachusetts, Rhode Island, New York and Connecticut, met at the Hartford Club on September 20 and voted to set up permanent headquarters in Boston.

The commission was set up by interstate compact in 1947 to provide for abatement of pollution in interstate waterways. Other states not yet subscribing to the compact are Vermont and New Hampshire, whose Legislatures are expected to pass cooperative measures in the near future.

Wisconsin Injury Cases

MADISON, Wis. — A total of 1,013 injury cases were settled by the state of Wisconsin in the paper and allied industries during 1948, a report released by the state, discloses. Included in that figure were four fatalities, 136 permanent partial, and 873 temporary. Indemnity paid out amounted to $261,738. Medical aid paid on a "fee" basis came to $28,748.

During August, 1949, there were 77 injury cases reported in the paper and allied products industries in Wisconsin. One was fatal, as a result of reel tender being caught in a reel drum.

ECA Authorization

WASHINGTON — Increased procurement authorizations for newsprint, pulp and paper products for the United Kingdom and Ireland, have been reported by the ECA. An earlier authorization of newsprint for Ireland totaling $44,000, was raised during the week ended September 24 to $77,000, for procurement from Canada. An authorization totaling $190,000, for pulp and paper products for the United Kingdom, to be obtained from the United States, was raised to $400,000.

Canadian Time Lost

OTTAWA — Canadian Government reveals 12,800 man-working days were lost through labor disputes in the pulp and paper products industry during July this year, though no time was lost in such disputes in the logging and lumber industry.

Survey Housatonic Sewage Problem

GREAT BARRINGTON, Mass. — The Board of Selectmen on September 21 agreed to hold a joint meeting with the Prudential Committee of the Fire District to discuss a survey of sewage problems in the Housatonic River. Their action followed the suggestion of William H. Flaherty, Prudential committee chairman, who recommended "formation of a sewage disposal district" to control spending of approximately $4000 appropriated by the Fire District and the town for a survey.

Wallboard from Waste

CAMBRIDGE, Mass. — Attendance at the conference on Wallboard from Waste, sponsored by the Northeastern Wood Utilization Council and held at Harvard University on September 16, totaled 110 persons.

Program of the meetnig was as follows: "Wood Waste Supply in New England," Edward S. Sowinski, in charge of field survey; "Demand for Wallboard from Dealers' Standpoint," Joshua A. Nicherson, Orleans, Mass.; "Pulp Preparation for Wallboard Manufacture," A. J. A. Asplund, AB Defibrator, Sweden; "'Xilon'—A Semi-Chemical Process for Wallboard," Paulo Marpillero, Azienda Brevetti Industriali, Italy; "The Manufacture of 'Interwood' Wallboards," Oswald Wyss, Interwood A. G., Switzerland; "Wallboards Made by the Swedish Cellulose Co.," Gosta Genberg, Svenska Cellulosa AB, Sweden; "'Durisol' Lightweight Construction Materials," John D. Dale, Durisol, Inc., New York; "Production of Hardboards from Wood Waste Without Resin Binders," Donald F. Othmer and Louis Ricciardi, Brooklyn, N.Y.; and "Wood Waste Boards Using Resins," T. W. Sears, Monsanto Chemical Co., Springfield, Mass.

SYMPOSIUM ON RESIN BONDED WALLBOARDS: (a) "Resin Bonded Wood Waste Panels," Thomas H. Vaughan, Hampton, S.C.; (b) "Phenolic Bonded Board," J. Walter Cobb, Jr., Cobbwood, Inc., Hope, Ark.; (c) "Development of Plaswood Products," Robert A. Caughey, Souhegan Mills, Wilton, N.H.; (d) "Continuous Manufacture of Resin Bonded Wallboard," Major Keith Trevor, British Artificial Resin Co., Ltd., England; (e) "Production of 'Novopan' Board," Fred Fahrni, Switzerland, and Warren C. Smith, Wonderwood Corp., Calif.

"Equipment for Wallboard Manufacture," H. D. Thweatt, Lake Erie Engineering Corp., Buffalo, N.Y.

Concluding remarks and summary, Robert S. Aries, Northeastern Wood Utilization Council, New Haven, Conn.

Among those present at the recent meeting of the Northeastern Wood Utilization Council were: TOP—Left to right: Prof. W. Arnold Hosmer, Harvard Graduate School of Business Administration; Dr. Robert S. Aries, technical director, Edgar L. Heermance, secretary and Halsey Hicks, president, NEWUC. . . CENTER—Left to right: Arne J. A. Asplund, AB Defibrator, Stockholm, Sweden; Dr. Arthur Pollak, consulting engineer, New York (former head of West Virginia Pulp & Paper Co., development department; Thomas H. Vaughan, Hampton, S. C.; H. D. Thweatt, Lake Engineering Corp., Buffalo, N. Y. . . BOTTOM—Left to right: T. W. Sears, Monsanto Chemical Co., Springfield, Mass.; Warren C. Smith, Wonderwood Corp., California; John D. Dale, Durisol, Inc., New York; Dr. Donald F. Othmer, head, chemical engineering department, Brooklyn Polytechnic Institute.

Canadian July Canal Tonnage

OTTAWA — Tonnage of freight through Canadian canals during July showed the following, with figures for the same month a year ago being given in brackets, the Canadian Government reports: Welland Ship Canal, paper, 32,945 (22,737) tons; woodpulp, 2,533 (9,366) tons; Sault Ste. Marie Canals, Canadian Lock, pulpwood, 24,782 (27,950) tons, Canadian & U. S. Lock, III, 676 (137,532) tons; St Lawrence Canals, paper, 16,777 (7,397) tons, woodpulp, 2,533 (10,276) tons.

Canadian Rail Rate Raise

OTTAWA—The Canadian Board of Transport Commissioners on September 22 awarded Dominion railways a temporary increase of eight percent in freight rates. The increase is in addition to the 21 percent awarded in March, 1948.

FOREIGN

Oppose European Woodpulp Survey

GENEVA, Switzerland—Sweden, Norway and Great Britain on September 20 objected to a proposal that the United Nations Economic Commission for Europe undertake a survey of the European wood pulp situation.

The survey was suggested at a private meeting of the commission's timber committee on September 19 by Executive Secretary Gunnar Myrdal, of Sweden, who told the committee that Swedish pulp sales to the U. S. had almost ceased. "This has aggravated, more than any other single factor, the dollar crisis of my native Sweden, and to a lesser degree of Norway and Finland," Mr. Myrdal said.

He added that the Scandinavian governments and pulp industries should adjust their plans to "the hard reality that, in the future, the U. S. will never again be a major regular customer for European woodpulp." He suggested that the committee investigate possible additional outlets for Scandinavian pulp products in Europe.

Union of Soviet Socialist Republics

WASHINGTON—Direct reports from the USSR are not available. However, a book published last year by two Russian forest economists, states that the area of "continuous" forest is 700 million hectares, annual growth is 700 to 800 million $m^3(r)$, and planned output of all forest products in 1950 will be 280 millions $m^3(r)$, the current issue of *Unasyla* discloses. Planned deliveries to the pulp and paper industry are to be from 30 to 35 million cubic meters.

Comparison of the planned output with estimated present growth indi-

cates the immense possibilities for expansion that exist. Furthermore, it seems likely that, when all productive forests are brought under management, the annual growth figure can be substantially increased.

Unfortunately, there is no way of estimating what supplies of pulpwood or of pulp and pulp products European countries may expect to import from the USSR in the near or distant future.

In a report for 1948, the Ministry of the Timber and Paper Industries presents statistics, in percentages only, showing progress achieved in timber operations and in the output of forest products during the past year as compared to 1947. Specifically, 43.9 percent more wood was brought out of the forest in 1948 than in 1947, whereas the total amount of timber cut was 37.3 percent greater. The manufacture of paper increased 18.5 percent and that of cellulose 35.4 percent.

Portuguese Integrated Mill

LISBON—Plans have been drawn by a group of Portuguese capitalists for an integrated mill with an annual capacity in the beginning of 20,000 metric tons sulphite pulp (10,000 bleached) and 18,000 metric tons of paper. The design of this mill is said to permit doubling the pulp capacity, while maintaining the same ratio of bleached pulp to total pulp and increasing the paper capacity to 28,000 tons annually, with a minimum of expense. If present plans are carried out, the mill (in conjunction with a sulphite-pulp mill now producing 6,000 tons of pulp annually) ultimately will supply Portugal's entire requirements for kraft paper and bag paper, and most of its requirements for fine paper and will still have 30 to 50 percent of its pulp capacity left to supply the export market. If financing arrangements are completed so that construction can begin when planned, the mill should begin operations some time during the latter half of 1951.

Would Extend Exp.-Imp. Act

OTTAWA — With the opening of the new session of Parliament here, the Canadian Government has disclosed that it has intentions to seek approval of the legislators to extend the life of the Export and Import Act which is scheduled to expire its present term on December 31. This means that the Government may want to place itself in a position whereby import bans or restrictions may be imposed or continued against U. S. goods, if conditions warrant in view of the adverse trade balance between the two countries and the shortage of American dollars.

Far Eastern Soda Ash

WASHINGTON — The Indian Tariff Board is expected shortly to submit recommendations regarding protection for India's soda ash industry, it is reported, following completion of an investigation of the matter by the board. The soda ash industry of India had earlier asked protection against imports which it claimed were underselling the native product. Source of the imports was not indicated. However, some Far Eastern areas produce soda ash, including Japan. The latter's production showed a drop in latest figures reported. The budget for Ceylon for 1949-50, carries an estimate for a new caustic soda plant.

SUPPLIERS . . . . .

Walter J. Maytham, Jr., has been named Pacific Coast district manager of the Westinghouse Electric Corp. He will be located in the San Francisco office. Mr. Maytham will take over the duties of Charles A. Dostal, vice-president, who retires next May after 43 years with the company. For the last 10 years Mr. Dostal has been in charge of the company's sales in the Pacific Coast states, Alaska, and the Hawaiian Islands. He will handle special executive assignments in the Pacific Coast District until his retirement.

Shartle Bros., Middletown, Ohio, have developed a radically new method of heat-treating Jordan filling bars. It is claimed that plug bars processed by this new method are capable of substantially better service and longer wear. According to reports from the six or eight mills that have been using these specially treated bars in their plugs over the past year, definite improvement over the old type bars is being realized, Shartle Bros., report. Trade name of the new Jordan filling process is Flint 32.

Rohm & Haas Co., resinous products division, Philadelphia reports plant-scale production of Amberlite IRC-50, a carboxylic acid type cation exchange resin of extraordinary selectivity. This exchanger has been proved effective in the recovery of antibiotics, the firm states. Buffered, it absorbs selectively such amphoteric substances as amino acids, growth factors and peptides. IRC-50 will adsorb cationic fungicides, deodorants, dyes, inks and amine type age-resistors.

Hardinge Co., Inc., York, Pa., will exhibit a "packaged" dry grinding system at the 22nd Exposition of Chemical Industries, Grand Central Palace, New York, November 28 to December 3. Self-contained and portable, the unit measures approximately 7½' by 5' by 8' high. It needs only a single power connection to be put into operation. Included in the packaged system are: a constant-weight feeder suspended from a three-cubic-foot feed bin; a Hardinge conical mill with drive motor; air classifying system with loop classifier, Cyclone product collector, exhaust fan and all piping; bag-type dust collector; and "electric ear" sound control unit.

OPENS DULUTH OFFICE

John E. Morrison heads the district sales office of the Link Belt Co., recently opened at 422 Board of Trade building, Duluth, Minn. . . He was formerly district sales engineer at Chicago and Minneapolis.

Osborne Paper Mill Equipment Corp., Fulton, N. Y., filed a reorganization petition under the bankruptcy law in Federal court in Utica, N. Y., on September 20 and Judge James T. Foley appointed George M. Pennock of Watertown, trustee to continue the business. Mark A. Osborne as president and Myrtle D. Osborne as secretary, signed and papers stating the company had defaulted on a $3,000 payment on a mortgage for $92,000 held by the Citizens National Bank of Fulton and the Reconstruction Finance Corp. Judge Foley found company has liabilities less than $250,000; book assets are placed at $547,141.

Bristol Instrument Co., to improve facilities in the Mid-West for repairing Bristol Instruments, has consolidated its Akron and Chicago branch factories in Chicago. With this consolidation, customers in the future will be served by the repair department of the main factory in Waterbury, Conn., instead of from Akron.

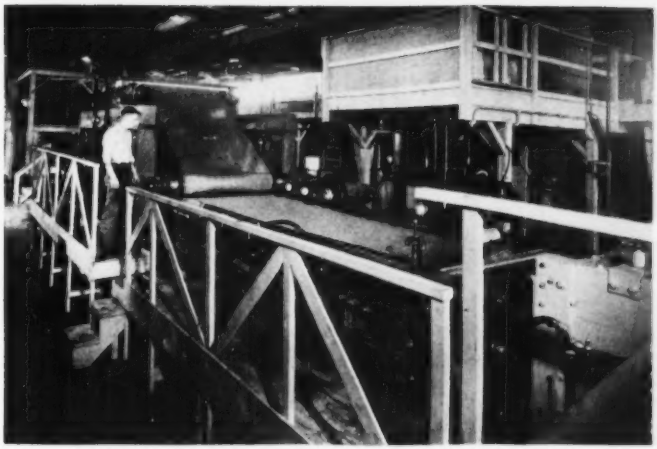
Worthington Pump & Machinery Corp., Harrison, N. J., has assigned Harry E. Lewis to the foreign and export department. Mr. Lewis was formerly works comptroller at the firm's Holyoke, (Mass) works. George Bourque succeeds Mr. Lewis as works comptroller.

Longview Lime Corp. is the new firm style of the Longview-Saginaw Lime Works, Inc., Birmingham, Ala. The firm was founded in 1874. "The ownership, management and capital structure stay exactly as heretofore," Warren Lewis, president, states.

Holyoke Machine Co., Holyoke, Mass., has named Leon H. Perry to direct its reorganized water wheel department. Mr. Perry was formerly with James Leffel & Co., of Springfield, Ohio, and before that with the Rodney Hunt Machine Co., of Orange.

Electric Storage Battery Co., Philadelphia, has named C. H. Leet manager of the Pittsburgh branch. He joined the company in 1938 as a salesman in the industrial battery department of the Pittsburgh Branch.

Chemical Linings, Inc., Watertown, N. Y., will remove on October 1 to 500 Trust Co., building, telephone 6070.



Downingtown four-foot hardboard fourdrinier and press section.

The W. & L. E. Gurley Co., Troy, N. Y., on September 19 elected Robert G. Betts treasurer, succeeding his father, Edgar H. Betts, who has resigned after 40 years of association with the firm, during several of which he served as vice-president. The elder Mr. Betts is a partner in the investment counseling firm of Betts & Morris, first vice-president of the Troy Record Co., and a director of the Union National Bank.

Leeds & Northrup Corp., Philadelphia, is offering a new line of buffer solutions for calibrating pH instruments. Nominal pH values are 4, 7, and 9; actual, 4.01, 6.86, and 9.16 at 25 C. Solutions are supplied in one-pint unbreakable, non-contaminating, reuseable polyethylene bottles on which are printed pH-temperature calibrations from 0 to 60 C. Buffers are made, and checked after bottling, to National Bureau of Standards specifications.

Recent Downingtown Installations

"During the last 15 months the Downingtown Mfg. Co., Downingtown, Pa., has engaged in rebuilding ten or 12 paper machines, adding vats, stainless steel stock distribution boxes, stainless steel mix boxes, press equipment, suction rolls, extractors, dryers, cutters, slitters, reels, drives, cylinder molds, etc.," E. Y. Brown III of that firm reports, adding, "We have installed a number of suction slices on cylinder molds with worthwhile results."

One complete new 4-foot hardboard fourdrinier forming table and press section has been built and recently put into operation at the Stimson Lumber Co., Forest Grove, Ore., and the firm has in the process of manufacture a three-width felt machine for the Ruberoid Co., Mobile, Ala.

"A large number of our modern proflow and conflow vats have been put into operation during the past year. These include stainless steel vats, complete cast iron vats with bronze, monel or stainless steel circles, and wood body, copper lined vats with cast iron ends. A special approach flow system designed for and producing excellent formation is a part of all of these vats," Mr. Brown discloses. "Our Wiener refiners have been redesigned for precision setting and to obtain a uniform and constant product. We have designed a new line of gear units for continuous and heavy overload duty as required for the proper operation of paper machines under all operating conditions.

"We have also designed a complete line of pulpers and are now building a number of these for both batch and continuous pulping of mixed papers, news, kraft clippings, pulp, broke, etc."

Palletizing-Minus Pallets

PHILADELPHIA — Boxes, barrels, bales, drums, and cartons can now be handled in multiple units, *without the use of pallets*, by the application of the new Yale & Towne Pak-Loader Fork Truck System.

The system is most advantageous: (1) where large quantities of goods are stored, and (2) when goods are customarily shipped unpalletized.

Where large quantities of goods are stored, the system saves thousands of dollars since it does away with pallets.

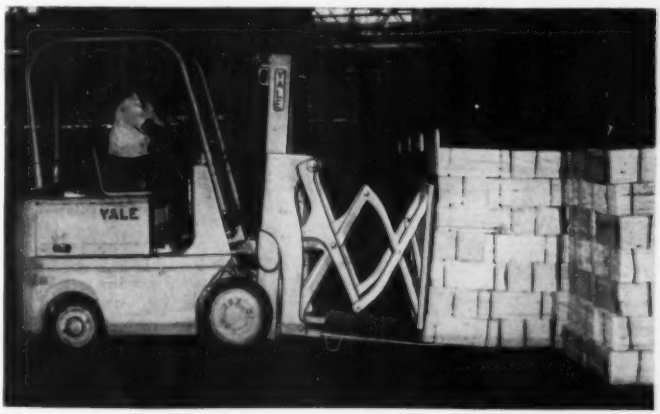
The system eliminates handling operations and saves work-hours when pallets are not to be shipped with the load, as loads comprising many individual containers are pushed into position on freight cars or highway trucks in one operation, whereas pallets would have to be unloaded one container at a time.

The above two comparisons bring out advantages in addition to the now well known savings made possible by handling goods as unit loads (i.e. many packages at once) rather than handling each package individually.

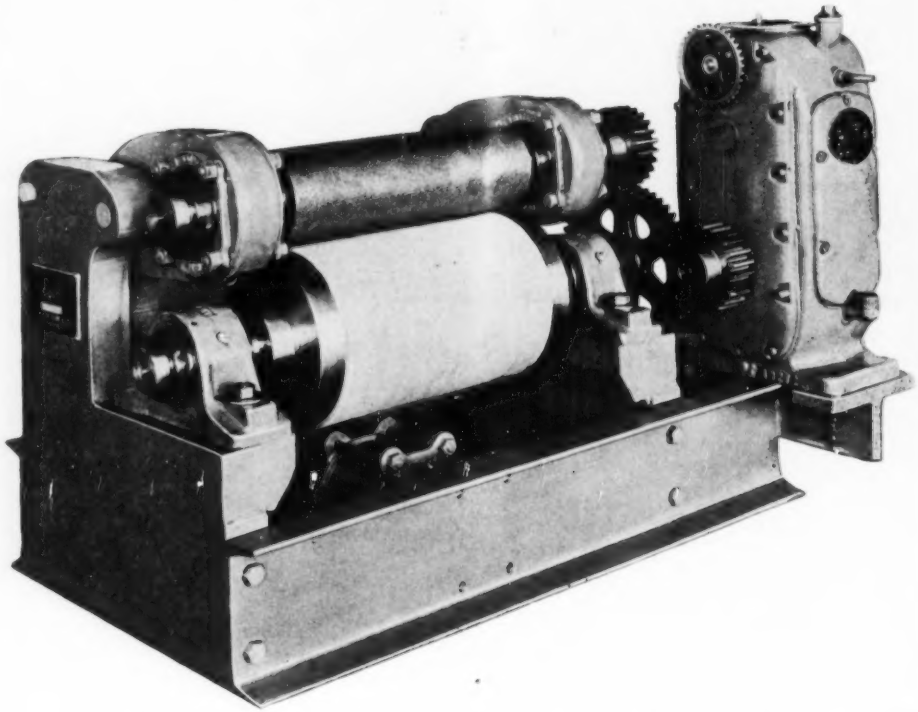
The Pak-Loader fork truck system comprises two components, namely fork trucks equipped with pusher mechanisms and two or three specially adapted steel plates per fork truck.

The steel plates are cut to the size which best fits the specific load to be handled. Legs about four inches high are secured to one end of the plate. When loading the plate, a block of wood is placed under the toe to keep it level. The forks of the truck slip under the plate for lifting. When unloading, the forks are tilted forward to rest the front end of the loaded plate next to the pile of goods already stored. As the pusher is extended, the truck moves backward. A locking device holds the steel plate on the forks and prevents it from being pushed off with the load. The plate is returned for reloading when the truck picks up another load. While the truck is taking a load to storage, or from storage to shipping, another plate is being loaded in readiness for the truck's return.

The truck, of course, can be used as a regular fork truck for handling skids and pallets when both pallet (or skid) and non-pallet non-skid operations are employed.



EMBOSSING MACHINES



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Paper Stocks for the Blueprint Industry[1]

Part II

By

HUGO KLEIN

Consulting Chemical Engineer, Houston, Texas

Brown Print Papers

Brown print papers are used primarily for making relatively inexpensive translucent negatives by contact printing from original drawings and tracings in essentially the same way as blue prints are made, as shown in the diagram. These negatives are in turn used as originals for making contact positive prints, such as reproduction cloth prints, blue line prints, brown line prints, etc. However, when properly made, brown prints are far more permanent than blue prints or diazotype prints, and for this reason some companies use brown print paper not only in the customery 12, 14 and 16 pound weights for intermediate negatives, but also in 24 and even 30 pound weights for permanent prints and records (basis: 500—17″ x 22″).

Brown print papers are sensitized or coated with a solution which is strongly acid in citric, tartaric and or oxalic acids; and the solution may even contain some free nitric acid, although there is no excuse for this except an inferior formula or improper compounding of the solution. The solution is applied to one face (generally the felt side) of the paper by means of a series of wetted rollers over which the paper travels, the excess is scraped off, and the paper is dried, usually by means of hot air. Brown prints are made in much the same way as blue prints, and often on the same machines, except that the exposure to light through the tracing is markedly longer; the first water wash has to be particularly thorough; and "hypo" (sodium thiosulfate) is used to fix the print instead of bichromate or peroxide.

Chemically, as with blue print paper, the presence of reducing substances must be avoided. Because brown print paper requires high physical strength in a thin light sheet, heavily sized 100% high grade rags or cotton linters is standard practice for the furnish.

High wet tensile strength is of even more importance in brown print paper stock than in blue print, because the wetting it receives under tension during coating and printing is even more drastic than in the case of blue print. Among strength factors, tearing resistance is second in importance with brown print paper stocks; and ease of trimming comes third. Folding endurance, while desirable, is not of too great import because, as intermediate prints from which other prints are made, brown prints are kept flat and rarely folded. Freedom from puckering and curling, and good wet rub, are more important in brown print paper than in blue print for the same reasons, but in accentuated form. It is also advisable to season or age brown print paper before coating, but due to the basic differences between this paper and blue print, it is generally inadvisable to do so as long. On the average, one month is adequate.

As to the print itself, the goal is maximum opacity of brown and maximum translucency of white, with the thin, light papers which are used as intermediate negatives and which constitute practically all of the brown prints used. Hence, brown print paper stock must really be a tracing paper suitable for coating and printing. Furthermore, the print must be evaluated by light transmitted through it, and not by light reflected from it as with blue print.

Considerably more light-sensitive chemical per unit area is applied to the brown print paper stock than is done with blue print, and the penetration into the paper is intentionally deeper. Superficial coating gives weak browns and sometimes causes crystallization or "silvering" of the chemicals on or near the surface of the paper. Relatively deep absorption of the chemicals by the paper is sought; in fact, pin-point penetration through to the back of the paper is not seriously undesirable, provided the pin-points are well distributed and not concentrated locally. The main essential is that the absorption or penetration be uniform, as from a practical standpoint the brown will be no more opaque than its least opaque portions.

As with tracing papers, the color of the brown print paper stock should be blue-white, first of all to improve its transmission of actinic rays from the printing lights, and secondly for effective visual contrast with the brown background. The latter consideration becomes more important in brown line prints, i.e. positive brown prints with brown lines, figures and letters on a background of white, which can be made by contact printing of brown print paper from a brown print negative print.

In addition to the color of the sheet, maximum translucency demands a uniform formation and resistance to yellowing due to heat and light, in brown print base papers. Freedom from dirt and other spots is less important than in tracing papers, because most brown print paper is used for negatives, and the brown color masks these foreign particles. However, as with any sheet of paper for any purpose, it is best to have a clean stock. Of course, in the case of positive brown line prints, which are also made in appreciable quantity from the same paper, specks in the paper are definitely objectionable.

Brown print papers are also transparentized, like tracing papers, in order to attain increased translucency or transparency. Some manufacturers actually make a finished transparentized tracing paper out of their brown print paper stock some time before coating with the sensitizing solution. Others transparentize immediately before coating, either as a separate operation or by means of a special pre-coating section of their coating machines. Still others transparentize the brown print paper after coating, either immediately or after a lapse of time. In any event, the same observations made in connection with tracing papers apply to transparentized brown print papers, except that ink-taking and erasing are rarely important with brown prints, and they are with tracing papers. Transparentizing brown print papers involves plenty of troubles and difficulties, and many blue printers steer clear of these headaches by using the untransparentized paper to make their prints, transparentizing them temporarily when advisable by means of kerosene or some similar fairly volatile substance.

Diazotype Papers

Diazotype papers differ from blue print and brown print papers in that they produce a positive print from a tracing, whereas the latter produce a negative print from the same tracing, as indicated in the diagrammatic section. Another basic difference is that the diazotype process is what may be termed an additive process; while blue print and brown print are subtractive processes. By this is meant that everything is added to the diazotype paper

[1] Part I appeared in Paper Trade Journal Sept. 15, 1949.

stock, and nothing taken away, as the paper progresses through coating, developing, etc., as we shall see, and is present on and in the paper and print for better or worse. On the other hand, after blue print and brown print papers have once been coated, all ensuing operations such as washing remove something from the paper and print, so that in the final print nothing remains but the paper itself and the pigment forming the image. Obviously, there are profound chemical differences among them, but we are not concerned with them here except insofar as they influence the specifications of the paper stocks, the subject of this article.

Diazotype papers fall into two principal categories: those which are developed by ammonia gas or vapor; and those which are developed by a liquid developing solution. In the former, all of the dye-producing components are coated on the paper; in the latter; some of the dye-producing components are coated on the paper, and the rest of them are embodied in the developing solution. In both the ammonia and the wet types, the coating solution is strongly acid, due to one or more of a great variety of acids and acidic salts used, such as citric acid, tartaric acid, oxalic acid, boric acid, nickel sulfate, stannic chloride, aluminum sulfate, to mention just a few. The coating solution is generally applied in essentially the same manner as for blue print and brown print papers to the felt side of the paper, but the weight of chemicals deposited per unit area is considerably less, and the goal is to keep these chemicals on the surface fibers of the sheet and avoid penetration. Also, to combat curling during coating and subsequent handling, the paper is usually given a back-coating of water, or of a weak solution of gelatin, gum arabic, etc., as a part of the coating operation.

The papers are exposed to light beneath a tracing just as blue print and brown print are (see diagram), but there is no washing, and development is entirely different. The ammonia papers are developed in any of several types of special machines by means of warm, moist ammonia gas or vapor, which is, of course, strongly alkaline. The wet papers are developed in any of several types of special machines by moistening the exposed or printed face slightly with developing solution, which varies according to the particular paper from slightly acid to strongly alkaline. The resultant prints all consist of lines, letters and figures delineated in black, red, brown, maroon or blue dye against an essentially white background.

Base paper stocks for diazotype, whether of the ammonia or wet type, are best made of all the same kind of fiber, and by and large, an all-sulfite sheet has proven best so far for the usual 17, 20½ and 24 pound papers (basis: 500—17″ x 22″). The reason is that in these lightly and superficially coated papers, the necessity for uniformity in the little absorption and penetration which takes place is of tremendous importance. It is desirable that the pulp be as free of lignin and pentosans as possible, as there is good reason to believe that the latter in particular react chemically and unfavorably with some of the diazotype chemicals. High grade rosin-alum beater sizing is used for diazotype paper stocks. For tub or surface sizing, glue is strictly taboo, as it produces yellow-brown backgrounds in the prints. Starch is the customary tub sizing, although the author knows of one European mill which before the war produced an excellent diazotype stock with no surface sizing at all. For opacity, which is considerably more important for diazotype than ever for blue print, titanium oxide and similar loading materials are widely used; and some promising work has been done on the use of small quantities of soft, short-fibered pulps to fill the voids and interstices between the sulfite pulp fibers. In color, the sheet should be blue-white, to help mask the tendency of the backgrounds of diazotype prints to turn creamy or yellowish in tint as they become older, due mainly to oxidation of the chemicals on the surface of the background.

With regard to physical strength, diazotype paper stock requires no more wet tensile strength than is necessary to see it safely through the light surface wetting it receives on the coating machine, because it is not given any water washes during the subsequent printing operation, as blue print and brown print are. Good tearing resistance is desirable, and so is ease of slitting in trimming with shears; although the latter is less important for diazotype than for blue print because comparatively little diazotype paper is printed as continuous yardage from roll stock as blue print is. High folding endurance is the most important strength factor in diazotype paper stock, as the prints are folded and unfolded many times for mailing, filing, ease of carrying in brief cases and notebooks, etc.

Curling is probably the most exasperating and baffling physical problem with which paper mills and blue print coaters have to contend in diazotype papers. First of all, it interferes with uniform coating of the paper with the light-sensitive, dye-forming diazotype chemicals, which is extremely important in these direct positive papers. But there is another important reason why curling is so objectionable with diazotype. One of the basic advantages which diazotype has to offer over blue print is the fact that, because only a simple dry or slightly wet development, which is almost instantaneous, is needed to produce the finished print after exposure to the printing lights, the paper can be furnished to the user in sheets cut to the same size as the tracings which are to be reproduced. Obviously, this eliminates the labor and waste of cutting and trimming prints out of the roll by hand, as is necessary with blue print. Furthermore, while manufacturers provide diazotype developing attachments for continuous blue printing machines for running diazotype papers in rolls (of course by-passing the water washes, etc.), and while combination printing-developing machines built especially for diazotype papers can handle roll stock, it is safe to say that even most rolls of diazotype paper which are sold are used by cutting a sheet out of the roll by hand shears to conform with the tracing, and then printing and developing it. Thus, most of the diazotype paper coated is used in sheets, either machine cut or hand cut, and the attendant convenience and economy of time and labor would be lovely were it not for that ogre — curling — lurking in the shadows.

Let us follow the life history of a sheet of diazotype paper from the time it is finished at the mill until it becomes a print. First of all, it is rolled up tight and wrapped at the mill. It is fresh, it contains a goodly percentage of moisture, and the sizing materials have not yet reached an equilibrium condition. In due course, it is taken off the mill's warehouse floor and shipped to the coater's plant, where it again is stored until it is to be coated with diazotype sensitizing solution. By this time, the paper has acquired a definite "set" due to the curvature of the roll, and this deformation is obviously more chronic as one approaches the core because the radius of curvature becomes smaller and smaller. Furthermore, there are bound to be differences in the condition of the paper as one travels axially from the edges of the roll towards the middle, and radially from the outside circumference towards the core. For example, if the paper is stored in a dry, warm room, it will tend to lose moisture to the air by evaporation from the edge and from the outside layers; the internal moisture of the roll cannot evaporate into the air until it has migrated to the edges or to the outside layers of the roll.

In any event, the coater mounts the roll on his coating machine and splices it in. He has already begun his battle with curling by having the mill always roll his paper with the felt side facing in or out, whichever is better for his particular case; and by exercising every care possible during storage. But now his battle begins in earnest, and the lurid details depend on the inherent curling propensities of the paper stock aside from the initial "set" and condition described above; on whether the paper is to be the ammonia type or the wet type; on the composition of his sensitizing solution; on atmospheric conditions; etc. The coater's first goal is to achieve as absolutely uniform a coating as he can; thereafter, his idea is to give his customers flat sheets which will produce flat prints, regardless of how much trouble and expense it entails on his part. So he equips his coating machines with "break" rolls, bulge bars, contraptions made of wire,

sticks, string, etc. to try to physically torture the paper into flatness; he coats the back of the paper with water or some pet anti-curl solution, either before or after the sensitizing coating on the face, or both; he carefully controls and adjusts the tension on the paper, the contacts with the coating rollers, the positions of the scrapers, the rate of drying down to the desired 3-4% residual moisture content, and so on and so forth during the coating operation. Some coaters have advantageously eliminated the wind-up at the end of their coating machines by installing rotary cutters which cut the paper into large sheets as it emerges from the coating machines. Others still prefer to wind the coated paper up in rolls the same size as the original mill rolls, with the coated face always facing either in or out, depending on which has been found better for the particular set of circumstances involved. Before these rolls go to the rotary cutters to be cut into large sheets, the coater may let them stand for a certain length of time, or he may re-roll them in the opposite direction, or he may store them in a room with conditioned air, or he may go through any of several similar rituals in his efforts to combat curling. After being cut into large sheets of the proper size by the rotary cutter, the paper is finally cut into smaller sheets of the desired size on guillotine cutters, with special care being observed so that the machine direction of the paper stock is disposed in the proper direction with respect to the long dimension of the sheet. These final sheets are then carefully wrapped with moisture-proof and light-proof wrappings and are ready for shipment to the customer.

The customer opens the package some weeks later, and the nice, flat sheets with 3-4% moisture content are exposed to the local climate, which may be a hot, humid one or a cold, dry one. He places a tracing over a sheet of the diazotype paper and feeds them into the printing machine, where they come in contact with the intensely hot glass and are subjected to the powerful actinic rays of the mercury vapor or carbon arc lamps. The sheet then goes alone to the developing machine. If it is of the ammonia type, the warm, moist ammonia fumes surround the sheet, back and front, fairly completely, so that at a reasonably flat final print usually results. If it is of the wet type, and if the machine is of the design which applies water or developer to the back as well as developer to the face of the print, fairly flat prints can also normally be expected. However, the simpler wet type developing machines, which apply only developer to the face of the paper, have often been a great source of annoyance, trouble and expense. The disconcerting aspect of the thing is that, despite all of the painstaking care the mill and the coater lavish on the paper, ten packages of sheets in a row may make excellent flat prints, but the eleventh one will produce prints which curl up like springs. Ostensibly, everything is the same for the eleventh package as for the previous ten! Could it be gremlins?

Well, we have finally sweated out (it's not really as tough as that!) a nice, flat diazotype print, made from a good tracing at the correct exposure and properly developed. The lines, letters and figures are clear, sharp and distinct, and the background is a pleasing blue-white color. Obviously, in a print like this, dirt and other imperfections in the paper stock are particularly undesirable; a dirt speck can readily occur at just the right spot to be mistaken for a decimal point. Brightness, which we haven't mentioned before but which is desirable in all four classes of paper stocks discussed in this article, is especially so with diazotype papers in adding to appearance of the prints.

Now we come to another problem with diazotype papers which is not encountered with blue prints or brown prints, except occasionally in blue line or brown line prints, viz. ink-taking and erasing. A big advantage which diazotype prints have over blue prints is that easily discernible corrections, additions and notations can be made on them in ink, pencil or crayon. Such addenda can, of course, also be made on blue prints by means of special "inks," which are really eradicators or erasing fluids; but generally they are made with white, silver or red pencils, and they are not too distinct against the blue background of the print. With the positive diazotype print, such corrections and changes are as prominent as the lines, letters and figures of the print itself, and as long as they are made with pencil or crayon, they present no great problem either to make or to erase. However, quite often these additions are made with ink, and there is frequently a tendency for the ink to feather or bleed. Also, to make matters more difficult these ink insertions sometimes have to be erased mechanically or eradicated chemically, and new work drawn in without feathering over the erasure. Finally, to cap the climax, lines or words of the print dye image often have to be eradicated chemically and other material drawn in with ink in the same area.

This means that the diazotype paper stock must have a surface, not only capable of accepting the sensitizing coating perfectly uniformly, but also with sufficient toughness and wet rub qualities to withstand the friction of the coating operation, the acidity of the coating, the alkalinity (for a few papers, the mild acidity) of the developer, and the chemical action of ink and diazotype eradicators or mechanical erasure, without sufficient breaking down so that it will not take anything from red writing ink to India drawing ink satisfactorily! This is a large order, but paper mills and coaters have been quite successful in licking it. The use of erasing fluids or eradicators also necessitates a paper stock which will not pucker due to their action; and the same quality is called for by the occasional use of water color on diazotype prints for maps, charts, display posters, etc.

The "sandwich" or laminated idea expounded for blue print paper stock also applies to diazotype paper stock, but it should be quite obvious that the specifications for the two layers, particularly the coating layer, are quite different than for blue print, and considerably more meticulous. Also, to compensate for curling tendencies, it might be necessary to visualize a third or counter-balancing back layer, similar to the front or coating layer.

We finally come to the most difficult sheet of all those used in the blue print industry—the transparent diazotype paper. This is exactly what its name implies, a special tracing paper base stock coated with a special diazotype solution to produce prints with actinically opaque lines, letters and figures (usually yellow, red-brown or "sepia") against the translucent background. It is a versatile and useful tool for office and plant duplication, for saving wear and tear on valuable tracings, for making composite prints, and for many other purposes too numerous to discuss here. The problem for the mill is to combine all of the good features of tracing paper stock, except the glue tub sizing, with all of the good features of regular diazotype paper stock, except its opacity. There is no point in re-enumerating all of these characteristics, as they were covered fully in the foregoing sections of this article which dealt with these two paper stocks. The problem for the coater is to sensitize these papers so that they will fulfill their functions adequately; and these papers are also made "natural" and transparentized just as with tracing papers. It is undeniably true that the wet type transparentized diazotype paper is the most difficult and exacting paper which the coater is called upon to produce.

Conclusion

The blue print process is almost 110 years old, and brown print is not quite 100 as yet; but more progress has been made in both during the past 25 or 30 years than in all the preceding time. Not quite 25 years ago, the first diazotype paper made its timorous appearance, and about the same time tracing papers began to come into use for purposes where the durability and permanence of expensive tracing cloth were not required. In this relatively short span, diazotype has supplanted blue print as the big item in the industry, and much more tracing paper is now sold than tracing cloth. This is striking evidence of the phenomenal advances in technology of all sorts, but it is also a tribute to the ever-growing close cooperation and mutual confidence between the coaters and the paper mills. Furthermore, it is indicative of what can be expected of the future!

In conclusion, the writer would like to leave with you an idea which has intrigued him for 20 years: Why not coat diazotype, blue print and brown print at the paper mill?

British Columbia Pulp & Paper Co. Ltd., Modernizes Woodfibre and Port Alice Plants

By
L. C. KELLEY
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Woodfibre Plant

During the past year the modernization programme, which commenced in 1945, was to a large degree completed at the Woodfibre Plant, but has not progressed that far at Port Alice. The main centres for modernization in Woodfibre were the Wood Plant, the Steam and Power Plant and the Water Supply.

Wood Plant

The Wood Plant was completed and put in operation during the late summer of 1948. It consists of a single, reinforced concrete building, which houses all the machinery from incoming logs to finished screened chips. The jackladder is unique in that it is made of reinforced concrete in contradistinction to the customary wood or steel jackladder. It is thus free from attack by teredoes and free from rust by the elements. Incoming logs from the jackladder are cut into a maximum of 24-foot lengths with a 108-inch diameter motor-and-air-operated swing saw.

Figure 1. Cut-off saw showing concrete jack-ladder and secondary chain conveyor.

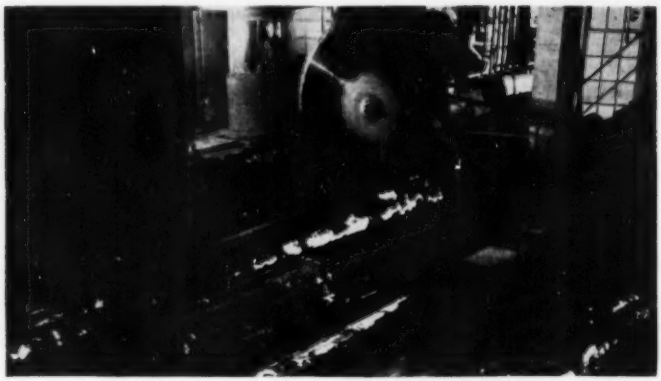


Figure 2. Cut-off saw, log storage deck before hydraulic barker and control booth.

From the secondary loghaul after the swing saw the logs are kicked on to a storage deck which feeds a Bellingham type barker. This barker is a departure from the regular barkers in that only 600 gallons of water per minute are used to do the barking. The 1120 to 1250-pound water pressure is furnished by a Bingham pump whose suction side has water entering from the main pulp mill gravity system at 400 pounds per square inch.

From the hydraulic barker the logs go to a secondary storage deck, and those up to 42 inches in diameter go on concave live rolls directly into a Sumner 175-inch chipper driven by a direct connected General Electric 1200 HP wound rotor motor. The logs which are over 42 inches in diameter are conveyed to a one-man Sumner headsaw rig, where they are cut down to suitable size and returned to the live rolls to the chipper. A small slasher saw has been installed after the one-man head rig to cut up the small slabs of bark or rotten wood which are destined for the hog.

The chips from the chipper go by 60-inch inclined rubber belts to four surge bins, each feeding via a Link Belt ro-

↓ Figure 3. Hydraulic barker in operation.

tary feeder to an Allis-Chalmers vibrating chip screen. While the surge bins are small, they take care of the surges of chips which come from a succession of large sized logs. The oversized rejects from the chip screens go through a small hog, which is used as a rechipper, and are returned to the surge bins for further screening. The sawdust from the chip screens joins the bark and other refuse to the hogged fuel system. All bark, rotten wood, small limbs, etc., from the wood preparing in its various stages in the Wood Plant go through a hog before they are delivered outside the Wood Plant to the hogged fuel system to the Boiler House.

The Wood Plant has its own electrical distribution centre and is in this sense a completely self-contained unit. The screened chips from the Wood Plant are conveyed by rubber belt to a chip elevator which feeds three con-

Figure 4. Allis-Chalmers vibrating chip screen.

crete chip silos, each 48 feet in diameter by 90 feet high. These have been described in former articles in the Paper Trade Journals. They feed via a Merrick Chip Weightometer to the digesters.

Steam and Power Centre

The Steam Plant and Power Plant are contained in anew reinforced concrete building more centrally located to the various plant departments than the previous plant.

The Steam Plant consists of three boilers, each of 100,000 pounds capacity per hour: one oil fired only and the other two equipped to burn hogged fuel or oil or both. These two have five hogged fuel cells each for burning hogged fuel. All three boilers are Babcock Wilcox and produce steam at 600 pounds pressure and 700° F.

Figure 5. Number three boiler with its five dutch ovens for hogged fuel and the oil burning auxiliaries in the foreground.

The Power Centre consists of one 2812 KVA Westinghouse hydro-electric turbine driven by a Pelton wheel, manufactured by Vancouver Engineering Works, at 450 pounds pressure. In addition to this hydro-electric turbine, there are two Elliott turbines, each a 2500 KVA capactiy. These turbines are driven by steam at 570 pounds pressure, with extraction at 150 pounds for high pressure process, and exhaust at 50 pounds for low pressure process. The temperature in the 150-pound and 50-pound mains is controlled by jet type desuperheaters. In addition to these three turbines, a 2500 KVA Allis-Chalmers condensing turbine was moved from the old power house and can be used for emergencies or for start-ups where the steam for electrical power demand is greater than the steam process load.

The Switchboard is a metal clad, dead front, cubicle type General Electric of most modern design and is fed by 4160-volt current. This is led to the various distribution centres, where it is stepped down on the distribution centre transformers. The feeders to the distribution centre are lead-covered armoured cable underground.

In the wall between the Power House and the Steam Plant is the operating room of the engineer. In this room are all recording instruments for the various steam centres, and the engineer can see at a glance the turbines, the switchboard and the boiler operating panels. The operating panel for the three boilers is centrally located, and for each boiler there are three panels giving a continuous recording of the steam produced, pressure, temperature,

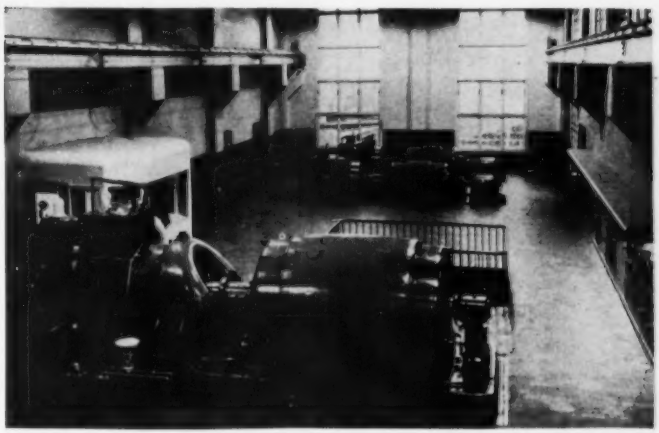


Figure 6. One end of new power house showing the two Elliott turbines, the condensing turbine, and the engineers' control room and switchboard.

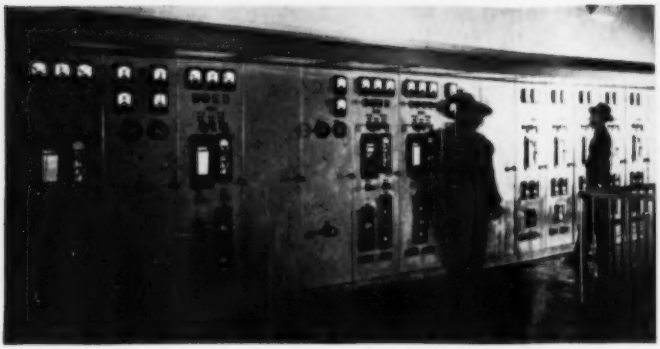


Figure 7. Switchboard in new power house.

air temperature, draft readings, etc.

The combined Steam and Power Centre is ultramodern in all respects, both in appearance and in equipment.

Water Supply

In order to take care of the increased demands for water for the hydraulic barking plant, hydro electric turbine, etc., many changes were made in the incoming water supply system. A new dam was built at Henriette Lake, 54 feet high by 450 feet face, multiple arch construction. This has raised the level in the lake 30 feet over the former level and constitutes a reservoir of water storage sufficient to carry the mill through even prolonged droughts.

From Henriette Lake the water flows via Cedar Creek to the Cedar Creek penstock which was completely rebuilt. A completely new and modern screenhouse was built to replace the old one at the entry point. This furnishes water to the hydro-electric turbine and the plant at 450 pounds pressure.

In addition to the above, 4,000 feet of 18-inch penstock were replaced on the line from Boulder Creek. This penstock was replaced in woodstave creosoted pipe.

A new screenhouse was built on the Mill Creek water supply system, which furnishes process water to the plant from the main penstock and screenhouse at 250 pounds pressure, and from the intermediate penstock and screenhouse at 110 pounds pressure.

When the new Wood Room and Steam and Power centres were completed, the old sawmill, breakdown plant, and boiler house were razed and the sites levelled off, thus improving the general appearance of the plant property as a whole.

A set of Jennsen towers, 12 feet in diameter by 90 feet high, 121 feet overall height, with an integral passenger elevator, monolythically poured with the moving forms of the towers proper, are presently in process of being finished to replace the former nine wooden acid towers, which had been in existence since the start of the Woodfibre Mill. The new Jennsen towers will be completed and ready for operation in September.

In addition to the above, many minor items of modernization were completed, such as: complete mechanization of warehousing pulp and loading pulp into cars. Clark trucks are used for this purpose, and this in turn meant strengthening all the warehouse floors and foundations. On each of the two Fourdrinier machines a "Rotabelt" was put into service, increasing the wire life and making for smoother operation of the machines.

A new, completely furnished First Aid Room was built to take care of minor injuries, and a full-time Safety Director now directs the Safety Programme of the plant from this centre.

Figure 8. Bleached stock riffiers.

The above completes the major changes in modernization at Woodfibre, completed up to the present.

Port Alice Plant

Since the modernization plans of British Columbia Pulp & Paper Co., Ltd., called for concentration first on the Woodfibre Plant, the programme at Port Alice has not reached as yet the stage of completion that has been achieved at Woodfibre. However, many items of modernization have been removed from the agenda at Port Alice and concentration is now being given to completion of the major programme details.

A "Cant Barker" was installed in the Wood Plant, removing the hand barkers completely from service. This Cant Barker uses 700 gallons of water per minute at 1350 pounds pressure, which is furnished by a Bingham pump directly conected to a 600 KW condensing steam turbine, which was brought from the old power house at Woodfibre. The incoming water to the Bingham pump is furnished by an Allis-Chalmers pump discharging at 130

Figure 9. Motorized piling in warehouse.

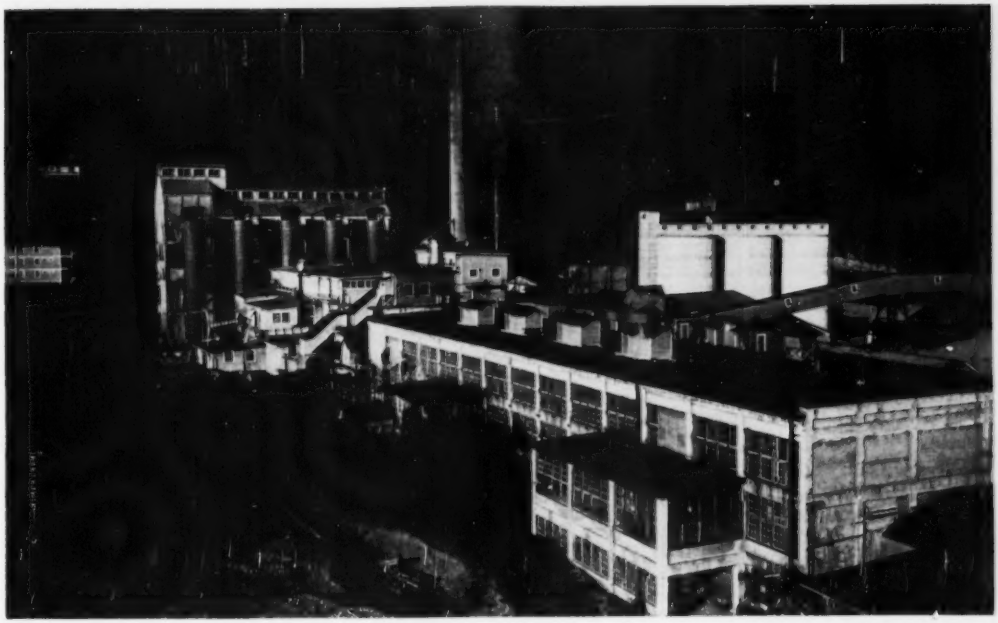


Figure 10. General view of Port Alice Mill, showing new chip silos and new roof of machine room and screen room buildings.

pounds pressure. This installation is unique in that the 700 gallons of water are salt water and not fresh water. This in turn meant a completely new design of pump trim and materials of construction for the Bingham pump.

Three chip silos have been installed at Port Alice, each 48 feet in diameter and 80 feet high, being 10 feet shorter than the Woodfibre silos.

In the Digester House, all bronze and copper piping, valves, etc., have been replaced with acid resisting steel. Three of the four digesters have been changed over from 12-inch bottom tees and valves to 16-inch acid resisting steel bottom sleeves and 16-inch to 14-inch acid resisting steel bottom tees and 14-inch acid resisting steel motor-operated blow valves. One digester (No. 5) was already so equipped when originally installed, and the remaining digesters will be completed shortly. As each digester's bottom fittings were changed over, blow pipes were replaced in 14-inch acid resisting steel instead of the former cast iron or Ni-retsist.

In the Unbleached Screen Room, an Allis-Chalmers vibrating screen was installed as an extra knotter and a Rietz refiner installed to take care of the screenings.

Complete new roofs were put on the Screen Room and Machine Room buildings and the wooden trusses in the Machine Room completely replaced with steel trusses.

Former wooden A-frame type handling equipment on the wet ends of the machines was replaced with a modern steel travelling crane design.

The storing of pulp in the warehouse and the loading of pulp in ships was completely mechanized, and Towmotors are used in contradistinction to the Clark trucks at Woodfibre. This mechanization of pulp handling, as in Woodfibre, necessitated a very great amount of redesigning of wharf and warehouse flooring.

Two new wooden towers have been added to the seven existing acid towers, making them nine in all, and allowing much better acid plant operation.

All piping from the Bleach Plant, Acid Plant, Caustic Storage Plant and acid storage tanks was changed from its former locations and replaced on a steel truss and hanger system which is very effective.

A continuous Kamyr chlorination system was installed to replace the old batch system. The chlorine for this tower is delivered from the dock to the tower by air pressure, and a new centre at the dock was built with two manifolds, each manifold handling eight one-ton cylinders of chlorine.

The above constitutes a list of the main smaller items completed in the modernization programme. The Port

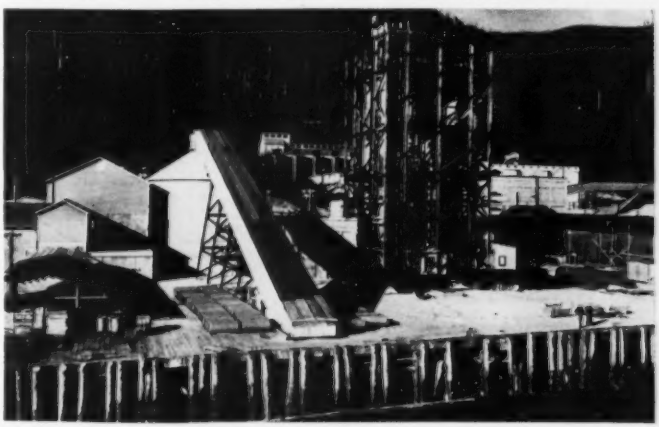


Figure 11. New dock, new sulphur storage tank, sulphur unloading conveyor system, new bleach mixing plant and two new acid towers at Port Alice Mill.

Alice Plant is presently engaged in several major items all under the same modernization programme:—

A Stebbnis prestressed concrete low pressure acid storage tank to operate up to 10 pounds pressure will be ready for service by the first of August.

The new switchboard in the new Power House is almost complete and construction work is proceeding on the new Boiler House and Power House. An oil fired Combustion Engineering boiler is being installed as the first unit. This boiler has a capacity of 185,000 pounds of steam per hour at 600 pounds per square inch pressure. It will deliver steam to two Elliott turbines, each of 3500 KW capacity. One of these turbines will exhaust at 150 pounds pressure for high pressure process, and the other will exhaust at 50 pounds pressure for low pressure process. When the steam demand for power exceeds the steam demand for process, the 150 pound steam can be used on the present condensing turbines in what was the old power house but which is now an extension of the new Power House. The turbines and boiler are due for delivery at the end of this month.

Likewise, a new Francis type Allis-Chalmers turbine, driving a General Electric generator of 800 KW capacity, is presently being installed to replace the old water wheel and turbine in the wheelhouse. The former water wheel and turbine did not have the capacity to take care of the power which can be produced from the extra amount of water resulting from a complete replacement of the former 18-inch pipeline from Victoria Lake by a 24-inch pipeline and the installation of a fifth pump at the Lake.

It is expected that the wheelhouse centres, Power House and Steam Plant will be completed by early fall.

St. Regis Log Handling

At the Deferiet, N. Y., mill of the St. Regis Paper Co., four-foot lengths of spruce and balsam fir pulp logs constitute the chief tonnage of raw material. The chipper in the Deferiet mill is capable of chewing up about 200 tons in an eight-hour day.

A K-375 Link-Belt Speeder crane with a 60-ft. boom and an Owen wood grapple has recently supplanted a combination of a locomotive crane and manual labor for handling these pulp logs. Its job is to unload the logs from railroad flatcars, stockpile them, and feed the conveyor that supplies the chipper. Loose logs are jack-strawed . . . piled helter-skelter to permit air-drying. Some logs are received, assembled in bundles, called "hoops" and these are stock-piled neatly as is, although loosened and separated before being placed on the conveyor.

The Link-Belt Speeder crane moves about 375 tons of logs in an 8-hour day, 6 days a week . . . In addition, the K-375 handles coal to and from stockpiles, and does many miscellaneous jobs of heavy hoisting around the plant.

The K-375 can stand as far away from the track as its greatest radius, and then deposit logs equally far away in the opposite direction.

St. Regis owns two Link-Belt locomotive cranes, bought second-hand in 1919 . . . that's 30 years ago . . . and since converted from steam to electrical power. They, too, are doing a good job at Waddington, N. Y. . . . 100 miles north by east from Deferiet . . . unloading pulp logs, most of which are used at the nearby Norfolk, N. Y., St. Regis mill.

Messrs. Eggleston and McDermid, who have operated the K-375 Link-Belt Speeder crane since it arrived last winter, say, "This machine was really built for operators. It is easy to handle, has plenty of power and has great lifting capacity at long radius. So far, we have had completely trouble-free operation."

William J. Talbot, Yard Superintendent, who has been with St. Regis nearly 25 years, wraps it up nicely with this remark . . . "The machine is doing a very good job, and proving very satisfactory. I wish I had another just like it."

Skylift Cuts Garber's Costs

Use of modern technique in handling paper rolls has produced a 58 percent savings in man-hours at an Ohio plant, with only one electric truck employed.

In March, 1949, the A. L. Garber Co., Ashland, Ohio, put the truck to work in its loading, unloading, and storing operations. By replacing a manual system, Garber succeeded in reducing handling costs, saving time, increasing the storage capacity of its facilities, and reducing damage to rolls.

The new battery-powered truck, an ATC Skylift with a paper clamp attachment, is used exclusively for roll handling. It unloads boxcars and motor freight cars, and manual assistance is required only when the boxcar doorway is too crowded to permit the truck to enter, or body height of a motor trailer is too low for the machine.

As rolls are removed they are inspected and receiving data is obtained. The Skylift then takes the rolls to the storage area where they are stacked on end, and recorded in a roll record book. A sheet is set up for each kind of paper showing date received, roll number, and weight.

The system simplifies filling of stock requisitions. When called on to fill an order, the truck operator determines from the roll record book which paper is oldest and which rolls will best fill the weight specified on the requisition. He then notes the location for each roll and is able to go directly to the correct spot.

After four months of operation, Garber has realized a saving of 42 man-hours a week, or 58 percent. Labor cost is down $40 per week, or 50 percent.

Because the operation is cleaner, janitor costs are lowered; Approximately 30 percent more paper can be stored in the same area.

Skylift electric industrial truck with paper roll handling attachment at A. L. Garber Co.

There is a great reduction in damage, now that rolls are stored on end instead of on side. The system is too new to permit a specific statement of this saving, but Garber estimates that it will be three-tenths of one per cent, or about $1,300 annually.

The new technique makes all aisles accessible, producing a decided increase in the speed of handling. Simplicity of locating a desired roll means more time saved, and, of course, the truck can handle loads far more quickly than human muscles.

The truck employed has a capacity of 2,000 pounds. The load is lifted by a clamp attachment that can be turned through 360 degrees. This permits a paper roll to be picked up or deposited in any position. Maximum lift is 130 inches, with a collapsed height of only 83 inches. Manufacturer is the Automatic Transportation Co., 149 West 87th street, Chicago.

The attachment is a relatively new development, having been introduced by Automatic at the Third National Materials Handling Exposition last January in Philadelphia.

Riley Stoker Corp., Worcester, Mass., Pulp and Paper Mill Installations
Sold or placed in operation August, 1948 - June, 1949, Inclusive

Name & Location	No. Units	Capacity lbs./hr.	Press.	Temp.	Firing
Oswego Falls Corp., Fulton, N. Y.	3	50,000	200#	429°F	Spreader
Bird & Sons, Inc., Shreveport, La.	1	30,000	270#	Sat.	Nat. Gas
Waldorf Paper Prods., Ct. Paul, Minn.	1	150,000	700#	750°F	Gas
Bird & Sons, Inc., East Walpole, Mass.	1	175,000	710#	750°F	Pulv. Coal
John A Manning Paper Co., Troy, N.Y.	1	40,000	275#	500°F	Pulv. Coal
Morris Paper Mills, Morris, Ill.	1	120,000	500#	550°F	Traveling Grate
Albia Box & Paper Co., Troy, N. Y. ..	1	30,000	180#	Sat.	Spreader
Container Corp. of America, Chicago ..	1	110,000	475#	760°F	Coal & Oil

Several Paper Machines Recently Built by "Sandy Hill"

The Sandy Hill Iron & Brass Works, Hudson Falls, N. Y., since August 1948 has been occupied to a considerable extent with custom built specialties requiring rather more ingenuity than those more nearly standard machines generally required by the trade.

Among these are a hardboard forming machine for Fibracel in Mexico. This had a very special forming table, presses structurally designed for a very high nip pressure, special suction equipment and an ingenious pressing device for graduating the removal of water from the formed sheet in the presses.

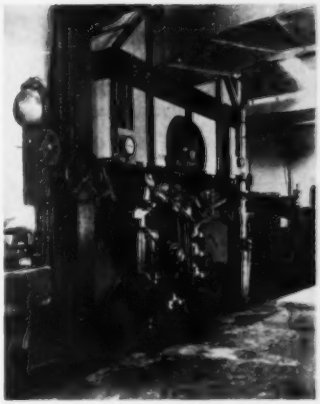
Final shipment on a job for the papermaking laboratory connected with the Forest Research Institute at Dehra Dun, India, has recently been made. This machine, two sections of which are pictured during shop erection, will be used to train the future papermakers of India and will be used in experimental projects to find new sources of papermaking material. Pictured are the presses, dryers and particularly a Yankee dryer at the end of the machine. This arrangement of dryers is well thought of in European and South American trade for getting a good finish on one side of the sheet of board without sacrifice of bulk. The machine is a commercial size laboratory machine, designed to run at substantial speeds. The fourdrinier as shown is a shaking fourdrinier and has a variable pitch built in. It is equipped with Sandy Hill Bertrams flow control unit, a Sandy Hill Bertrams shake and is capable of reproducing the effects secured on any commercial machine.

A general purpose machine will be started up within a few weeks at Fabrica Nacional de Papel in Uruguay. The fourdrinier is non-removable and fixed pitch. It has a Sandy Hill Bertrams flow control unit with recirculation. The press section has pneumatic loading and generally is of advanced design for machines of the width and speed required.

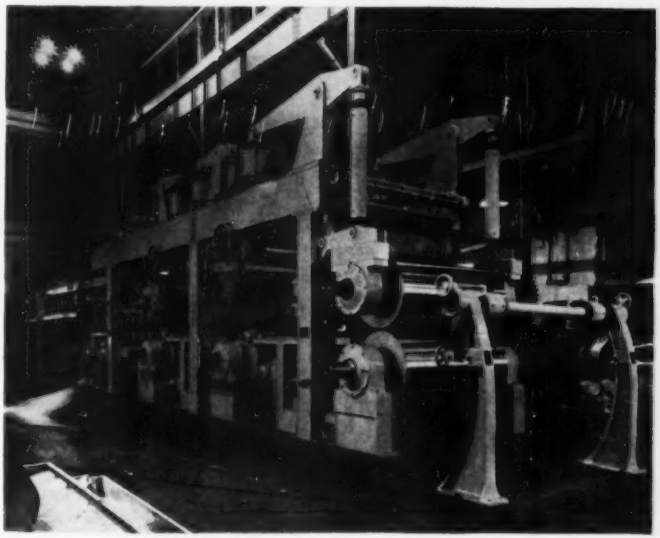
A machine for the Argentine and another for China have incorporated in them the type of board machine press section as shown in one of the pictures. These machines are being started up early this fall.

About to be put in operation near Buenos Aires, in Argentina, is a Sandy Hill built tissue machine which will be the largest and fastest machine of its kind on the continent. The wet end of the forming section features a high speed Sandy Hill Bertrams flow control unit featuring a recently designed nozzle type slice especially engineered for high speed applications. This new type of nozzle slice has a flexible metal lip which is adjustable across the face of the machine and provides for the correction of inequalities in the forming sheet while the machine is running.

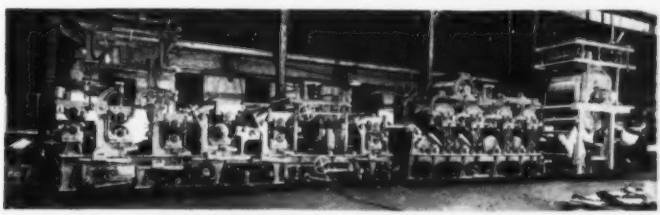
Among plant improvements handled by the Sandy Hill organization was a project complete at the Dresden Paper Mills, Dresden, Ohio, manufacturer of a strawboard filler for corrugation. Here the addition of two new vats, additional dryers and other improvements increased the production by 20 tons a day according to the general manager.



High grade tissue machine.



Hardboard forming machine.



Two sections of experimental paper machine for Forest Research Institute of India.

Certain types of boards, such as binders board, leather board, stereotype matrix and the like are still made on wet machines. These wet machines, have, of course, in up-to-date design, advanced structural features, but it is still a wet machine and is operated as such. A number of these have been built, some for export and some for delivery in the United States for operation in the current year.

One of the very finest grades of facial tissues, napkin and facial grade toilet is now being made on two Sandy Hill machines in Bancroft, Mass. A view of one of these machines which started up early last fall is shown in this article.

PRICES

The prices below reflect general market quotations applying to those standard grades in which the normal volume of business is being done.

NEW YORK

Delivered New York

Standard News, per ton—

Rolls, contract	$100.00/	—
Sheets	115.00/	—

F.o.b. Mills, Carload freight allowed, dock N. Y.

Kraft— per cwt., 40# base wgt.

Standard Wrapping Rolls	$6.50/	—
No. 1 Wrapping Rolls	7.25/	—
Standard Bag	6.00/	—

Tissues— per ream 24x36 (480) 10 lbs. 2500 lbs. or more

Wh. No. 1 Frd.	$155.00/	—
Wh. No. 1 M. G.	150.00/	—
Wh. No. 1½	140.00/	—
Wh. No. 2	120.00/	—
Kraft Anti-Tar	1.37½/	—
Shrd. Wh. No. 1 per lb.	.11½/	—

Toilet— per case of 100 rolls—1 M sheets.

Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.95/	—
Bleached 4½x5	8.80/	—
Per Case of 50 rolls—2000 sheets		
Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.80/	—
Per Case of 100 rolls—1000 sheets		
Facial, 4½ x 5, 2 ply	$8.95/$9.45	

Paper Towels—per case of 3750—Zone 1.

Wh. Jr. M'tif'd 9¼x9¼	$5.25
Br. Sr. M'tif'd 10x12	3.60
Br. Jr. M'tif'd 9½x9¾	3.10
Br. Jr. Sgl. fold 10x10¾	3.15
Blchd. 7½ x 11, 24/25 rolls	$3.95/$6.25

Manila, per cwt.

No. 1 Jute Tag 40 lb., sheets*	$15.05/$17.50
Reg. Jute M.F. Manila, sheets*	13.50/ 15.50
Wrapping Manila	8.75/ 10.50
Printing Manila	10.00/ 11.00
* Less usual allowance for rolls.	

Boards, per ton—

Filled News	$70.00/ —
Plain Chip	70.00/ —
Blchd. Mln. L-d. Chip*	92.50/ —
White Pat. coated*	110.00/
Kraft Liners 42 lb.	100.00/
Kraft Corr. .009	105.00/
Binders Boards	110.00/116.00

* Base Prices per 10 tons. Less than 10 ton but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following prices are representative of distributors' resale prices, all deliveries in Zone 1:

Rag Content Bonds and Ledgers—
White, 20 lb.

Bonds

	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$51.40/$53.90
100% Rag	44.55/ 46.15
75% Rag	33.90/ 35.40
50% Rag	28.10/ 29.55
25% Rag	24.85/ 26.80

Ledgers

	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$52.65/$54.55
100% Rag	45.65/ 46.40
75% Rag	35.15/ 36.10
50% Rag	29.40/ 30.05
25% Rag	26.15/ 26.80

Sulphite Bonds and Ledgers
White, 20 lb.

Bonds

	4 Ctns.
	per cwt.
No. 1	$17.50/ —
No. 2	16.65/ 16.75
No. 4	15.60/ 15.95

Ledgers

	4 Ctns.
	per cwt.
No. 1	$18.80/ —
No. 2	18.05/ —

White Book

Conversion Coated	Case
	per cwt.
No. 1	$19.75/$20.90
No. 2	19.25/ 19.65
No. 3	17.75/ 18.90
Machine Coated	
No. 1	16.40/ 16.65
No. 2	14.90/ 15.15
Uncoated	
No. 1 Antique (Watermarked)	16.40/ 17.90
Offset	15.15/ 16.65
A Grade E. F.	15.40/ —
A Grade S. C.	15.90/ 16.15
B Grade E. F.	14.90/ 15.15
B Grade S. C.	15.40/ 15.65

Twines
All Prices Nominal, f.o.b. Mill

(Soft Fiber)	
Coarse Polished—India	.35½/ .36½
Fine Polished India	.41½/ .43
Unpolished—Paper Makers	.32½/ .34½
Tube Rope	.33¼/ .35½
Wrapping	.36 / .38¼
Cotton	.58 / .60
Polished Cotton	.55 / —
(Hard Fiber)	
Mex. Sisal	.21 / .27
(American Hemp)	
Polished Hemp	.45 / .48
Unpolished	.35 / .37½

WORLD WOOD PULP MARKETS

Fourth Quarter Contract Prices, Per Short Air-Dry Ton

	Delivered, with varying freight allowances		On dock Atlantic Ports Full freight allowance		
	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$65.00/ —	$65.00/ —			
Soda, Bleached	113.00/ —	113.00/ —		Competitive	
Sulphate, Bleached	118.00/126.00	126.00/ —	125.00/128.00		
Sulphate, Unbl'd North'n		82.50/105.00	82.50/ 85.00	with	
Sulphate, Unbl'd South'n	80.00/ —				
Sulphite Blchd. (S'ftw'd)	118.00/ —	118.00/ —	118.00/ —	Domestic	Competitive
Sulphite, Blchd. (H'dw'd)	113.00/ —				
Sulphite, Unbleached	100.00/ —	100.00/ —	100.00/ —	Grades	
Sulphite, Unbl'd (Glassine)	105.00/ —	105.00/ —	104.00/105.00		

WASTE PAPER MARKET

Prices to Mills (Per Ton) F.o.b. Cars

	New York	Philadelphia	Boston	Chicago
	Sept. 15	Sept. 19	Sept. 17	Sept. 1
No. 1 Mixed Paper	$7.00/ $8.00	$6.00/ $7.00	$7.00/ —	$8.00/ —
Boxboard Cuts	7.00/ 8.00	4.00/ 5.00	— / 5.00	11.00/ —
Mill Wrappers	11.00/ 12.00	7.00/ 9.00	— / 9.00	10.00/ —
No. 1 News	10.00/ 11.00	9.00/ 10.00	10.00/ 12.00	10.00/ —
Over-issue News	15.00/ 16.00	12.00/ 14.00	8.00/ 10.50	18.00/ —
Corrugated Containers	17.00/ 20.00	19.00/ 20.00	18.50/ 20.00	20.00/ —
New Corrugated Cuts	18.00/ 20.00	20.00/ 23.00	16.00/ —	23.00/ —
Double Kraft Ld. Corr. Cuts	34.00/ 35.00	30.00/ 35.00	25.00/ —	40.00/ —
Used Kraft Bags	25.00/ 30.00	16.00/ 22.00	25.00/ 30.00	20.00/ —
No. 1 Brown Kraft Paper	25.00/ 30.00	25.00/ 30.00	25.00/ —	20.00/ —
Super Resorted Br. Kraft	25.00/ 30.00	35.00/ —	40.00/ —	35.00/ —
New Br. Kraft Env. Cuts	65.00/ 70.00	60.00/ 65.00	60.00/ 65.00	55.00/ —
New Br. Kraft Cuts	40.00/ 45.00	55.00/ —	45.00/ —	50.00/ —
No. 1 Gdwd. Shvs.	15.00/ 20.00	15.00/ 20.00	25.00/ —	25.00/ —
White Newsblanks	50.00/ 55.00	35.00/ 40.00	— / 50.00	35.00/ —
No. 1 Flyleaf Shvs.	25.00/ 30.00	20.00/ 25.00	35.00/ 45.00	30.00/ —
No. 1 Soft Wht. Shvs.	75.00/ 80.00	60.00/ 65.00	70.00/ 80.00	55.00/ —
Super Soft Wht. Shvs.	90.00/100.00	65.00/ 70.00	80.00/ 90.00	60.00/ —
Hd. Wht. Shvs.	85.00/ 95.00	80.00/ 85.00	80.00/ 90.00	80.00/ —
Hd. Wht. Env. Cuts.	100.00/105.00	90.00/ 95.00	90.00/105.00	90.00/ —
New Manila Env. Cuts.	65.00/ 75.00	60.00/ 65.00	60.00/ 70.00	55.00/ —
Col. Tab Cards	35.00/ 40.00	20.00/ 25.00	35.00/ —	35.00/ —
Manila Tab Cards	65.00/ 75.00	60.00/ 65.00	75.00/ 80.00	60.00/ —
No. 1 Mixed Ledger	30.00/ 35.00	27.50/ 32.50	37.50/ —	35.00/ —
White Ledger	45.00/ 55.00	37.50/ 40.00	50.00/ 60.00	45.00/ —
Mixed Books & Mags.	7.00/ 8.00	7.00/ 9.00	12.00/ —	7.00/ —
No. 1 Rep'd Hvy. Books & Mags.	20.00/ 25.00	15.00/ 20.00	22.00/ 23.00	20.00/ —

Rag Market

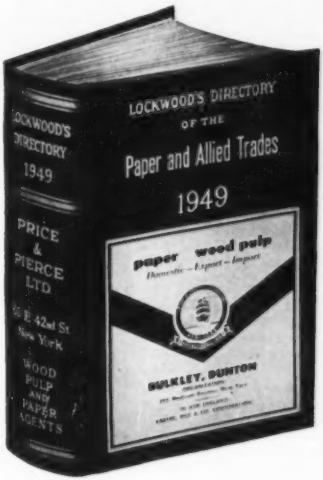
New Domestic Cotton Cuttings
(Prices to Dealers, f.o.b. Ship. Pt.)

	Per 100 lbs.	
White Shirt	$10.00/	$10.50
Unbleached Muslin	10.00/	10.50
Light Silesias	7.00/	7.50
White Back Blue Overalls	6.25/	6.50
Blue Overalls	6.00/	6.25
Fancy Shirt	4.50/	5.00
Percales	5.50/	6.00
Light Prints	5.50/	6.00
No. 1 Washables	2.75/	3.00
Bleachable Khaki	5.00/	5.50
Unbleachable Khaki	4.50/	5.00
Cottonades	4.25/	4.75
Lt. Flannelettes	7.00/	7.50
Men's Corduroy	3.50/	4.00
Women's Corduroy	3.00/	3.50

Old Domestic Cotton Rags
(Prices to Dealers, f.o.b. Ship. Pt.)

	Per 100 lbs.	
No. 1 Whites, Repacked	$4.25/	$4.75
No. 1 Whites, Miscellaneous	3.50/	4.00
No. 2 Whites, Repacked	2.75/	3.00

1949 EDITION



1420 PAGES
OF
INFORMATION
UNOBTAINABLE
ANYWHERE ELSE
IN ONE
SINGLE VOLUME

If these lists of pulp and paper mills—converters — paper merchants — mill officials—equipment manufacturers were sold separately—you would pay ten times the cost of this one complete directory.

FOR IMMEDIATE DELIVERY—$10.00 per copy

LOCKWOOD TRADE JOURNAL CO., INC.

15 WEST 47th STREET **NEW YORK 19, N. Y.**

No. 2 Whites, Miscellaneous	2.00/	2.25
Cotton Pants & Overalls	2.50/	2.75
Thirds and Blues, Repacked	2.00/	2.25
No. 1 Roofing Rags	1.25/	1.35
No. 2 Roofing Rags	1.15/	1.25
No. 3 Jute Bagging	1.05/	1.10
No. 4 Brussels & krd. Bek'd crpts.	**.90/**	**1.00**
Roofing Bagging	**.80/**	**.95**

New Foreign Cotton Cuttings

(Prices to Dealer, F.o.b. Dock, N. Y.)

	Per 100 lbs.
New Dark Cuttings	
New Mixed Cuttings	
Light Silesias	prices
Light Flannelettes	
New White Cuttings	are
New Unbleached Cuttings	
Fancy Shirt Cuttings	nominal
Light Prints	
Bleachable Khaki, No. 1	
Unbl. Khaki, No. 1	

Old Foreign Rags

(Prices to Dealer, F.o.b. Dock, N. Y.)

	Per 100 lbs.
No. 1 White Cottons	
No. 2 White Cottons	
No. 3 White Cottons	
No. 4 White Cottons	prices
Extra Light Prints	
Old Light Prints	
Med. Light Prints	are
Dutch Blue Cottons	
Checks and Blues	
Linsey Garments	nominal
Dark Cottons, European	
Dark Cottons, Egyptian	
Old Shopperies	
New Shopperies	

Bagging

(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny	$6.50 /$6.50
Domestic Gunny, No. 1	6.75/ 7.00
Heavy Wool Tares	6.50/ 7.00
No. 1 Scrap Bagging	4.75/ 5.00
Foreign Manila Rope	5.00/ 5.25
Domestic Manila Rope	5.00/ 5.25
Jute Strings	5.50/ 5.75
No. 1 Sisal Strings	4.50/ 4.75
Mixed Strings	1.15/ 1.30

PHILADELPHIA

New Domestic Cotton Cuttings

(Prices to Dealers, F.o.b. East'n Ship. Pt.)

	Per 100 lbs.
White Shirt	$10.00/$10.50
Fancy Shirts	4.50/ 5.00
Light Silestas	6.50/ 7.00
Unbleached Muslin	9.75/ 10.25
Light Prints	5.25/ 5.75
Washable No. 1	2.50/ 3.00
Blue Overall	5.75/ 6.25
Percales	5.50/ 6.00
Bleachable Khaki	4.50/ 5.00
Unbleachable Khaki	3.25/ 3.75
Men's Corduroy	3.75/ 4.25
Ladies' Corduroy	3.25/ 3.75
Cottonades	4.00/ 4.50

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. East'n Ship. Pt.)

	Per 100 lbs.
Mixed White	$3.00/ $3.50
Thirds and Blues Repacked	2.25/ 2.50
Cotton Pants & Overalls	2.25/ 2.50
No. 1 Roofing Stock	1.20/ 1.30
No. 2 Roofing Stock	1.10/ 1.15
Roofing Bagging	.90/ 1.00

Bagging

(Prices to Dealers, F.o.b. East'n Ship. Pt.)

	Per 100 lbs.
Old Manila Rope	$5.00/ $5.25
Foreign Gunny No. 1	6.75/ 7.00
Domestic Gunny, No. 1	6.75/ 7.00
Sisal Strings No. 1	3.00/ 3.50
No. 1 Scrap	4.00/ 4.50
No. 1 Jute Rope	5.50/ 6.00

BOSTON

Bagging

(F.o.b. Boston)

	Per 100 lbs.
Foreign Gunny	$6.00 /$6.50
Domestic Gunny	6.00 / 6.50
Domestic No. 1 Old Rope	5.00 / 5.25
Foreign No. 1 Old Rope	5.00 / 5.25
Mixed Strings	1.35 / —
Transmission Rope—Domestic	3.00 / 3.50
Jute Carpet Threads	— / 4.00
Bleachery Burlap	— / 9.00
Scrap Burlap—	
Foreign	5.00 / 5.25
Domestic	5.50 / 6.00
South America	5.00 / 5.50
Austr. Wool Pouches	8.25 / 8.75
New Zealand Wool Pouches	— / 6.00
New Burlap Cuttings	7.50 / 8.00
Heavy Baling Bagging	7.50 / 8.00
Paper Mill Bagging	— / 5.00

Domestic Rags (new)

(F.o.b. Boston)

	Per 100 lbs.
New Light Prints	5.75 / 6.00
Fancy Percales	6.25 / 6.50
White No. 1 Shirt	10.00 /10.75
Light Flannelettes	— / 7.00
Canton Flannels, Bleached	— / 9.00
Underwear Cutters, Bleached	10.75 /11.25
Underwear Cutters, Unbleached	10.00 /10.25
Blue Overalls	6.00 / 6.50
Soft Unbleached	9.75 /10.50
Blue Cheviots	6.00 / 6.50
Fancy Shirt	4.00 / 4.50
Washable	3.00 / 3.25
Khaki Cuttings	5.00 / 5.25
Men's Corduroy	4.50 / 5.00
Khaki Canvas	— / 5.50
B. V. D. Cuttings	10.00 /10.25

Domestic Rags (old)

(F.o.b. Boston)

	Per 100 lbs.
No. 1 Whites, Repacked	3.00 / 3.50
No. 1 Whites, Miscellaneous	2.50 / 3.00
Twos and Blues, Repacked	— / 2.00
Cotton Pants & Overalls	2.50 / 2.75
No. 1 Roofing Stock	.95 / 1.10
No. 2 Roofing Stock	.85 / 1.00
Roofing Bagging	.75 / .80

MATERIALS

Blanc Fixe

Prices firm. Supply adequate. Heavy demand. Currently quoted at $85.00 in bags, car lots, at works, 6 cents per pound, l.c.l., deld. By-product supply somewhat restricted. Quoted at $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

Bleaching Powder

Demand improved. Prices steady. Prices range from $4.25 to $4.75 per 100 pound drums, l.c.l., works.

Casein

Notable increase in demand. Argentine market badly shaken by currency confusion. Supply short. Little domestic available. Current prices on processed acid precipitated grades 21½ to 22½ cents, imported grades 19 to 20 cents, f.o.b. shipping point, car lots.

Caustic Soda

Demand heavier. Stocks ample for prompt shipment. Prices firm. L.c.l. sales reported at competitive levels. Solid caustic is reported at $3.05 per cwt. flaked and ground is quoted at $3.45 per cwt., in 400 pound drums, $3.95 per cwt. in 100 pound drums—car lots at works; liquid 50 percent in tank cars at $2.40 per cwt.; liquid 73 percent in tank cars at $2.50 per cwt., at works.

China Clay

Demand strong. Prices firm. Supply of domestic and imported ample. Domestic filler quoted at $10 to $12.50 per ton, car lots, f.o.b. mines. Coating clay is $15 to $25. Imported clay quotation, short tons, $16 to $35, export warehouse.

Chlorine

Demand strong. Supply condition tightened by cutback in caustic soda production. Prices firm. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt. in multi-tank cars, f.o.b., works.

Rosin

Demand irregular. Buyers lag for lower prices. Prices on I and K drop 7 cents. Gum rosin in drums per 100 pounds net in car lots, f.o.b. Savannah, B, $5.75; G, $6.62; H, I, K, $6.72; wood rosin, per 100 lbs., car lots f.o.b. Savannah; B, $4.25; FF, $5.50.

Rosin Size

Demand steady. Supply good. Seventy percent gum and pale wood grades, tank cars, $5.45 to $5.55 f.o.b. southern shipping point.

Salt Cake

Demand fair. Domestic quoted at $22.00/$24.00, f.o.b. shipping point, freight allowed to destination.

Soda Ash

Demand gains. Supply easy. Prices firm. Current prices, car lots per 100 pounds; in bulk, $1.15; in paper bags, $1.40; and in barrels, $1.90.

Starch, Corn

Prices guaranteed at Sept. 15 levels until Oct. 1.Demand strong. Supply ample. Pearl grade currently quoted at $4.82 per 100 pounds; powdered starch at $4.93 per 100 pounds; white corn dextrine at $5.17 per 100 pounds; car lots, f.o.b. Chicago.

Starch, Potato

Heavy paper and textile demand tightens supply and strengthens prices. Idaho quantities limited to warehouse. High grade quoted at $7.00 cwt., l.c.l., ex N. Y. whse. New production makes a start. Orders accepted for October delivery at $5.00 cwt., f.o.b. shipping point. Maine supply quoted $4.90/$5.00, f.o.b. Maine warehouse.

Sulphate of Alumina

Demand steady. Prices firm. Supply good. The commercial grades are quoted from $1.50 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.50 per 100 pounds in bags, car lots, at works.

Sulphur

Supply ample. Demand sustained at good level. Prices firm. Annual contracts are quoted at $18 per long ton, f.o.b. mines; $19.50, f.o.b. vessels, Gulf ports. Export price f.o.b. Gulf ports is $22.00 per long ton.

Talc

Demand continues far ahead of supply. Prices steady. Domestic grades are currently quoted at $23 to $28 per ton in 50-lb. paper sacks, car lots, f.o.b. mills; Canadian at $35 and up per ton.

Tapioca Flour

Supply liberal. Moderate demand. Dextrinizable grades range from $9.25/$9.50 cwt.; high viscosity, Southern B grades $8.50/$8.75 cwt., on dock Atlantic and Gulf ports. Northern refined grades range from $7.00/$7.25 cwt. on dock, N. Y., and are tight in supply, prices firm.

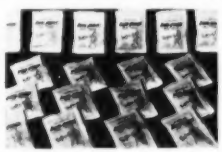
Titanium Dioxide

Demand picks up. Supply ample. Prices firm. Anastase 19⅛¢ pound carload lots, 20¢ l.c.l., rutile, 21½¢ pound carload lots, 22½¢ l.c.l.; 50-pound bags, f.o.b. plant, actual freight allowed.

PRODUCT DEVELOPMENT

Sugar Packet Sealer

NEW YORK — Leeds Sales Co., Inc., specialty package division has developed a low cost heat sealing web for use on high speed, automatic packaging, sealing and bag making machines. The press prints two colors on the face of a narrow web of paper, and applies a



heat sealing resin on the back of the sheet simultaneously. The heat sealing agent is applied only where the jaws of the sealer comes together.

Advantages reported are: permanent seal, high speed, fine multicolor printing, face-to-face or face-to-back seal, ability to withstand sterilization, ready adaptability for use as a loose wrap on automatic packaging machines, adaptability to spot application of resin,

economical and efficient use on pouch machines such as Transwrap, Stokeswrap, Rotoseal and pneumatic seal pouch and similar machines. The automatic equipment forms the web into a pouch, and fills and seals the pouch in a single operation.

In imprinting the sugar pouch web, pictured herewith, for the National Sugar Refining Co., a change can be made for every 30,000 impressions.

Leeds states that this press can be readily adapted for use for heat sealed labels and that label stock is available in rolls or sheets with overall heat seal coating or spot heat seal coating, as any specific job may require.

Portco Launching Quick-Ties

VANCOUVER, Wash.—Formation of a garden products division of the Portco Corp., Portland, Ore., at the company's plant here is disclosed by G. Ralph Meyer, vice-president, and production has started on the first garden item, Portco Quick-ties, designed to fasten vines, shrubs and other plants in a quick and easy manner.

Quick-ties are round eight-inch strips made of a wire center and covered with a resinized twisted paper twine. Trim from Northwestern paper mills will be utilized in the manufacture of Quick-ties, which will be introduced nationally and supported by extensive advertising.

Water Alkalinity Test Paper Set

TOWSON, Md. — An ingenious new test evolved by the development laboratory of the LaMotte Chemical Products Co., employs a series of new test papers for differentiating between caustic alkalinity, carbonate alkalinity and bicarbonate alkalinity of water and solutions. It is expected to find wide use in chemical manufacturing, power plants, process industries and wherever else it is necessary to control the alkalinity of treated water. A compact and inexpensive kit is available, consisting of three vials of selected indicator papers which will quickly show whether the alkalinity of a solution is due to caustic, carbonate or bicarbonate.

Plastic Printing Plate

CHICAGO—A plastic printing plate, which, under test, has produced more than 60,000 impressions without the need of additional makeready was described by E. M. Paulsen of Plastic Printing Plates, Inc., Oak Park, Ill., at the 1949-50 meeting of the Chicago Section, TAPPI. This dinner meeting was held at the Chicago Bar Asso. on September 19. The thermosetting plastic plate made from phenolic resin, is used in the same manner as any high-grade metal plate, Mr. Paulsen stated.

Disposable Paper Bottle for Infants

SAVANNAH, Ga. — Miss Emma Hair of 306 East 33d street, has applied for a patent on a disposable paper nursing bottle for infant feeding.

FINANCIAL RECORD

	Per Share Earnings		Indic.	Sept. 27
	Calendar Year 1948	12 Mo. to Approx. 6/30/49	Annual Divid. Rate	Approx. Market Price
PREFERRED STOCKS				
Armstrong Cork Co. $3.75 Cum.	$46.33*	$38.47*	$3.75	$98¼
Armstrong Cork Co. $4.00 Cum. Conv.	46.33*	38.47*	4.00	109½
Celotex Corp. 5% Cum.	26.42c	10.33p	1.00	16½
Champion Paper & Fibre $4.50 Cum.	99.97f	19.91r	4.50	96½
Container Corp. of Amer. 4% Cum.	105.41	99.87	4.00	99½
Crown Zellerbach $4.20 Cum.	61.84i	61.00p	4.20	100¼
Crown Zellerbach $4.00 Cum. Conv. 2nd	58.51i*	57.90p*	4.00	97¼
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	10.10	10.04	2.50	49½
Flintkote Co. $4 Cum.	83.25	66.07	4.00	103
Robert Gair Co., Inc. 6% Cum.	17.08	13.73	1.20	17
International Paper Co. $4 Cum.	263.00	254.71	4.00	100¼
Johns-Manville $3.50 Cum.	209.89	212.03	3.50	110½
Kimberly Clark Corp. 4½% Cum.	80.74	74.36	4.50	101½
Kimberly Clark Corp. 4% Cum. Conv. 2nd	41.59*	44.25*	4.00	99¼
MacAndrews & Forbes 6% Cum.	62.23	58.66	6.00	134½
Mead Corp. 4½% Cum.	73.46	68.78k	4.25	89½
Mead Corp. 4% Cum. Conv. 2nd	29.91*	24.30k*	2.00	51½
Paraffine Cos. Inc. 4% Cum. Conv.	156.11	136.31	4.00	103
Rayonier Inc. $2 Cum.	16.43	13.99	2.00	30½
St. Regis Paper Co. 4.40% 1st A	79.90	51.11	4.40	81¼
Scott Paper Co. $3.40 Cum.	59.06	55.14	3.40	93¼
U. S. Gypsum Co. 7% Cum.	314.45	296.82	7.00	185
United Wallpaper Inc. 4% Cum. Conv.	(d)0.79	20.50	2.00	25¼
West Virginia Pulp & Paper 4½% Cum.	79.45c	69.93p	4.50	107¼
COMMON STOCKS				
APW Products Co.	$0.73	(d)$0.56	(m)	2½
American Writing Paper Corp.	(d)0.15	(d)0.16	$0.25	6½
Armstrong Cork Co.	7.54	6.13	3.00	46¼
Celotex Corp.	7.21c	2.75p	1.00	16¼
Certain-Teed Prods. Corp.	4.02	3.21	1.00	13½
Champion Paper & Fibre	8.70f	1.70r	2.00	23½
Congoleum Nairn Co.	5.78	4.92	2.25	27½
Container Corp. of America	10.12	9.52	4.50	35½
Crown Zellerbach	6.70e	6.68p	2.00	27½
Dixie Cup Co.	6.70	6.65	1.80	30¼
Eastern Corp.	4.76	1.27	(h)	9
Flintkote Co.	5.86	4.40	2.50	26⅞
Robert Gair Co., Inc.	2.67	2.10	0.70	6⅞
Great Northern Paper Co.	4.63	5.32	2.80	39⅞
International Paper Co.	16.73	16.19	5.00	56⅝
Johns-Manville Corp.	5.22	5.27	2.00	41
Kimberly Clark Corp.	5.02	4.55	1.65	22½
MacAndrews & Forbes Co.	3.68	3.56	2.50	35¼
Marathon Corp.	4.11c	3.42	1.40	21¼
Mead Corp.	6.36	5.84k	1.00	12⅞
National Container Corp.	2.28	1.38	0.40	6¼
Paraffine Cos. Inc.	2.45	2.14	1.20	18¼
Rayonier, Inc.	9.09	7.55	2.00	24½
Ruberoid Co.	11.80	9.48	3.25	51¾
St. Regis Paper Co.	2.71	1.64	0.60	7
Scott Paper Co.	4.15	5.02	2.50	60¼
Sutherland Paper Co.	6.02	4.92	2.50	33
Union Bag & Paper Corp.	9.17	6.50	3.00	24⅞
United Board & Carton	2.04b	(d)1.72k	(e)	6¼
U. S. Gypsum Co.	15.04	14.18	6.00	97¼
United Wallpaper	(d)0.10	0.59	(n)	3⅝
West Virginia Pulp & Paper	11.33c	9.70p	3.00	41⅝

(a) 12 months to approximately 3/31/49
(b) Year ended 11/23/48
(c) Year ended 10/31/48
(d) Deficit
(e) Omitted dividend 2/4/49
(f) 11 months to 3/31/49
(g) 12 months to approximately 1/31/49
(h) Directors took no action on 8/2/49 dividend—last payment 5/2/49
(i) 12 months to approximately 4/30/49
(j) 8 months to 12/31/48
(k) 12 months to approximately 6/12/49
(m) Directors took no action on July, 1949, dividend—last payment 1/10/49
(n) Last payment 25c, 9/16/47
(p) 12 months to approximately 7/31/49
(r) 3 months to 6/30/49
(s) 12 months to 8/20/49

(*) Earnings per combined preferred shares.

Dividends Declared

West Virginia Pulp & Paper Co., has declared a year-end dividend of $1 on its common stock, payable October 14 to holders of record October 3.

Minnesota & Ontario Paper Co., has declared a quarterly dividend of 25 cents per share on its common stock, payable October 25 to holders of record September 30.

Simplex Paper Corp. has declared the regular quarterly dividend of 20-cents per share payable October 3 to holders of record September 23.

Minnesota & Ontario Paper Co., has declared a quarterly dividend of 25 cents per share on its common stock payable October 25, to holders of record September 30.

Capital Stock Cut

OTTAWA — Anglo-American Paper Co., Ltd., has cut its capital stock to 4,230 shares of $100 par value preferred and 10,000 shares of npv common.

LITERATURE

Cooper Alloy Foundry Co., Hillside, 5, N. J. Bulletin, "Names of Valve Parts." Presents diagrammatic sketches of gate, globe, check and lever-operated valves with a uniform material and parts identification code. Follows the newly-proposed standard designations of the Manufacturers' Standardization Committee.

Federal Reserve Bank of St. Louis, St. Louis, Mo. Monthly Review, Vol. XXXI, No. 7. Features "The Eighth District's Paper Dollars." Reports the industry's current conditions in the Eighth District, and suggests possibilities for expansion. Written by Weldon A. Stein.

Minneapolis-Honeywell Regulator Co., Belfield Valve Div., Philadelphia, 44, Pa. Bulletin No. 100-1, "Belfield Brass and Iron Cocks; Stop—Check—Non-Return and Transfer Valves; Swing Joints." Covers the manufactuer's line of extra grade cocks recommended for shut-off service where long life and trouble-free operation are important considerations.

National Association of Manufacturers, 14 West 49th street, New York 20, N. Y. Report, "The Foreign Trade Gap," Economic Policy Division Series, No. 14, July, 1949. Prepared for NAM by George Halm and Harry Hawkins, assisted by Francois Dickman, Nan Grindle and George Springsteen, Jr., economists of the Fletcher School of Law and Diplomacy. Presents the authors' belief that the major problem of world economic recovery can be solved—but only if the U. S. is willing and able to develop gradually an import surplus. Points out what the alternatives are if we take the attitude that the problem cannot be solved and the world has nothing to offer us. These are, first, that we discontinue help in the form of loans and gifts—in which case international trade will at once drop to the level of our imports, international multilateral trade will shrink, and regionalism and nationalism gain. Second alternative is to continue help in the form of gifts ad inf., the rich nations supporting permanently the poor nations Since both alternatives are unacceptable to the American philosophy, there is actually no alternative to our accepting an import surplus, the authors conclude.

Trumbull Electric Manufacturing Co., Plainville, Conn. Bulletin TEC 302A, "Enclosed Safety Switches, Type A." Contains information about types of applications for which these switches were designed, extent of the line, h.p. ratings, etc.

Southeastern Forest Experiment Station, Federal building, Asheville, N. C. Booklet, "Biennial Report of the Southeastern Forest Experiment Station for the Years 1947 and 1948, Station Paper No. 2." An over-all summary of the Station's forest research toward the improvement of forest land use and management and utilization for forest crops. Address the station's director for copies of the report.

Special Libraries Assn., 31 East Tenth street, New York 3, N. Y. Manual, "A Brief for Corporation Libraries; a Guide for Their Operation and Management," edited by Alma C. Matchell, librarian, Public Service Gas and Electric Corp., Newark, N. Y., planographed 1949, 64 pp., $1.75. Describes various methods found practicable by existing libraries.

IMPORTS

IMPORTS AT NEW YORK

Week Ending Sept. 24

Newsprint

News Syndicate Co., Colabee, Baie Comeau, 7015 rolls.
H. C. Craig Co., Kermie, Donnacona, 353 rolls.
R. A. Olsen, Newscarrier, Donnacona, 308 rolls.
H. C. Craig Co., G.D.D., Donnacona, 331 rolls.
R. A. Olsen, Dompaco, Donnacona, 358 rolls.
H. C. Craig Co., A.C.D., Donnacona, 325 rolls.
N. Y. Journal American, Markland, Liverpool, N.S., 499 rolls.
N. Y. Herald Tribune, Markland, Liverpool, N.S., 1718 rolls.
N. Y. World Telegram, Markland, Liverpool, N.S., 536 rolls.
Brooklyn Eagle, Markland, Liverpool, N.S., 748 rolls.
Brooklyn Eagle Press, Markland, Liverpool, N.S., 57 rolls.
Herald Statesman, Inc., Markland, Liverpool, N.S., 42 rolls.
Washington Post (Alexandria, Va.), Markland, Liverpool, N.S., 2625 rolls.
Alexandria Gazette, (Alexandria, Va.), Markland, Liverpool, N.S., 37 rolls.
Sun, Arlington, (Alexandria, Va.), Markland, Liverpool, N.S., 28 rolls.
Price & Pierce, Ltd., Markland, Liverpool, N.S., 33 rolls.
News Syndicate Co., Ethel Tombs, 3 Rivers, 301 rolls.

Cigarette Paper

Columbia Tobacco Co., Caronia, Southampton, 2 cs.
(———), Exanthia, Alicante, 5 cs.

Surface Coated Paper

Gevaert Co. of America, Granadero, Antwerp, 13 cs.

Wallpaper

Karr Ellis Co., Almdyk, Antwerp, 2 pkgs.

Printing Paper

Oxford University Press, American Harvester, Liverpool, 8 cs.

Parchment Paper

Intermaritime Forwarding Co., Queen Elizabeth, Southampton, 1 cs.

Tracing Cloth

Keuffel & Esser Co., American Traveler, Manchester, 15 cs.

Serviettes

(———), Caronia, Southampton, 10 crates.

Baryta Paper

W. Reimerdes, American Importer, Bremen, 1 pkge.

Filter Paper

H. Reeve Angel & Co., Inc., American Importer, London, 10 cs.

Drawing Paper

H. Reeve Angel & Co., Inc., American Importer, London, 1 cs.

Writing Paper

H. W. Robinson Co., American Importer, Liverpool, 2 cs. (& envelopes).
(———), Noordam, Rotterdam, 7 cs.

Boxboards

Polish American Trading Co., Mormacyork, Gdynia, 203 bdls.

Rags, Baggings, etc.

C. Smiles, Express, Bombay, 50 bls. paperstock.
New England Waste Co., Express, Cochin, 600 bls. cotton waste.
Cowa Co., Exochorda, Genoa, 249 bls. cotton waste pickers.
A. Siegle Corp., Granadero, Antwerp, 232 bls. cotton waste.
New England Waste Co., Almdyk, Rotterdam, 129 bls. cotton waste.
(———), Concordia, Antwerp, 134 bls. flaxwaste.
National Bank of Detroit, Concordia, Antwerp, 18 bls. rags.
Darmstadt Scott & Courtney, Concordia, Rotterdam, 84 bls. heavy burlaps.
(———), Concordia, Rotterdam, 104 bls. old bagging.
Manufacturers Trust Co., La Guardia, Genoa, 78 bls. waste bagging.
New England Waste Co., Examiner, Genoa, 81 bls. cotton waste.
E. Butterworth & Co., Inc., Hermina, Antwerp, 60 bls. old bagging.
E. J. Keller Co., Inc., Hermina, Antwerp, 104 bls. old bagging.
Darmstadt Scott & Courtney, American Manufacturer, Manchester, 52 bls. bagging.
American Express Co., American Manufacturer, Liverpool, 7 bls. hessian clips.
E. J. Keller Co., Inc., American Manufacturer, Glasgow, 78 bls. old bagging.
Harris Goldman & Co., Robert Maersk, Rouen, 61 bls. old cottons.
Castle & Overton, Inc., Robert Maersk, Rouen, 106 bls. scrap bagging.
S. H. Waldstein, American Harvester, Manchester, 25 bls. cotton waste.
M. O. Schimmel, American Harvester, Manchester, 25 bls. cotton waste.
E. Butterworth & Co., Inc., American Harvester, Manchester, 109 bls. old bagging.
N. Schwab & Sons, American Harvester, Manchester, 44 bls. cotton waste.
J. Eisenberg, American Harvester, Manchester, 89 bls. rag waste.
L. B. Lockwood, American Harvester, Manchester, 26 bls. hosiery waste.
A. W. Fenton, American Harvester, Liverpool, 100 bls. scrap bagging.
Chemical Bank Trust Co., Bryne, Antwerp, 242 bls. flaxwaste.
New England Waste Co., Bryne, Rotterdam, 200 bls. cotton waste.
Castle & Overton, Inc., Bryne, Rotterdam, 118 bls. bagging.
E. J. Keller Co., Inc., Bryne, Rotterdam, 110 bls. bagging.

Old Rope

(———), Express, Bombay, 276 bls. old hemp rope cuttings.

Casein

F. H. Paul & Stein Bros., Kirsten, Montevideo, 100 bags.
Hercules Powder Co., Uruguay, Buenos Aires, 8860 bags.
American British Chemical Supplies, Uruguay, Buenos Aires, 500 bags.
Crawford Keen Co., Uruguay, Buenos Aires, 1300 bags.
American Cyanamid Co., Uruguay, Buenos Aires, 1000 bags.
Borden Co. Chemical Division, Uruguay, Buenos Aires, 840 bags (ground lactic).

Woodpulp

Castle & Overton, Inc., Ranenfjord, Tofte, 3000 bls. dry bleached sulphite pulp, 508 tons.
The Borregaard Co., Inc., Ranenfjord, Tofte, 150 bls. dry bleached sulphite pulp, 50 tons; 272 bls. air dry kraft special pulp, 45 tons.

IMPORTS AT BOSTON

Week Ending Sept. 24

American Cyanamid Co., Kirsten, Buenos Aires, 360 bags casein.

IMPORTS AT PHILADELPHIA

Week Ending Sept. 24

Leigh Textile Co., American Manufacturer, Manchester, 92 bls. bagging.
American Express Co., American Harvester, Havre, 6 cs. note paper.
Mynol Chemical Co., American Harvester, Liverpool, 3 cs. carbon paper.
Leigh Textile Co., American Harvester, Manchester, 44 bls. bagging, 87 bls. mixed bagging.
National Casein Sales Co., Kirsten, Buenos Aires, 500 bags lactic casein.

IMPORTS AT BALTIMORE

Week Ending Sept. 24

Loumar Textile By Products, Examiner, Venice, 138 bls. bagging.
National City Bank, Examiner, Genoa, 105 bls. bagging.

IMPORTS AT NORFOLK

Week Ending Sept. 24

Darmstadt Scott & Courtney, Concordia, Rotterdam, 104 bls. bagging.

W. C. Jones, American Manufacturer, Manchester, 60 bls. cotton waste.

F. P. Gaskell & Co., American Manufacturer, Glasgok, 75 cs. coated paper (for cigarette tips).

(———), American Harvester, Manchester, 39 bls. bagging.

IMPORTS AT HOUSTON

Week Ending Sept. 24

(———), Almdyk, Antwerp, 306 bls. waste bagging.

(———), Almdyk, Rotterdam, 127 bls. rags.

MARKETS . . . . .

Pulp, Paper and Board Industry September, 1949, Report

By W. LE ROY NEUBRECH

Chief, Pulp and Paper Section
U. S. Dep't., of Commerce
Office of Domestic Commerce,
Forest Products Div.

ECONOMIC REVIEW

August apparently marked the end of the current downward trend in paper and board production which set in at the turn of the year and was climaxed by lower than normal output in the seasonally dull month of July.

In any period of rapid market swings, monthly statistics are much too tardy to allow for current analysis. Weekly data of the American Paper and Pulp Association disclose sharp gains in output starting the latter part of July and continuing almost steadily upward, week by week, through early September. Reports from Commerce Department Field Offices, based on interviews with industry leaders in various sections of the country, point to an expectation of a strong demand and consequently high level of production for the remainder of 1949 at least.

The most significant factor contributing to the current upward demand and optimism for the near future is the feeling that prices on most grades have solidified, thereby restoring confidence of buyers in not only purchasing for current needs but also in replenishing inventories. Reports from some consuming and distributing segments of the industry express the feeling that inventories were allowed to run low in midsummer, consistent with the dull market then existing, with the expectation that hand-to-mouth buying could easily cover needs. Now that a strong fall market is indicated, spot orders for quick delivery cannot be easily met. This failure has meant the loss of some business to those firms not in a position to draw from inventory for immediate conversion. While no current statistics are available, it is reported by some trade observers that book, groundwood printing and fine printing grades of paper in the hands of many commercial printers and other types of publishers (except newspapers) are also on the low side. Such firms reportedly are now interested in building inventories to an average 60-day supply in most types and grades of printing papers.

Personal Income and Consumer Expenditures

(In billions of dollars)

Annual rates—seasonally adjusted

	Total personal income		Total consumer expenditures
1948		*1948*	
Jan.	206.5		
Feb.	204.1		
Mar.	204.7	1st qtr.	175.2
Apr.	208.3		
May	209.3		
June	213.4	2nd qtr.	178.7
July	214.5		
Aug.	215.4		
Sept.	216.3	3rd qtr.	180.3
Oct.	216.3		
Nov.	216.6		
Dec.	217.0	4th qtr.	180.9
Year	211.9	Year aver.	178.8
1949		*1949*	
Jan.	215.7		
Feb.	212.9		
Mar.	212.4	1st qtr.	177.9
Apr.	212.5		
May	213.1		
June	212.4	2nd qtr.	178.2
July	209.7		

Source: Office of Business Economics, U. S. Department of Commerce.

Demand from distributive channels, both retail and wholesale, picked up materially during August as inventory reductions were completed and a new zest for replenishment got under way as the consequence of sustained retail sales and more confidence in stabilization of prices.

The marked improvement in the paper and board industry, reflecting relative stability of the Nation's personal income, which during the first seven months of 1949 was three percent above the same period of last year, has been an important underlying element of strength in the economy during the period of business readjustment since last fall. Declines in income from some sources have been offset by gains in other categories. The stabilizing influence of high personal incomes on general business activity as exercised through disposable income has been reflected in a steady volume of consumer expenditures. Because of lower prices this year, consumers have purchased about the same amount in terms of physical volume as they did in 1948, as well as saving a larger proportion of their current income. Retail sales of goods in general have continued relatively steady since the turn of the year, with durable sales, particularly automotive, continuing to rise but sales of nondurable goods stores moving steadily downward—by about five percent—since January. This trend in nondurables is an important factor suggesting that the aggregate actual consumption of paper and board has been moderately less than in 1948. The decline in manufacturers' and distributors' inventories of various categories of goods since their high point of late 1948 explains in large measure the lull in the production of such goods, thereby affecting paper and board production during the readjustment period of the past several months. The stability of the general business economy, however, lends encouragement as to maintenance of the overall demand and consumption of paper and board. When August and September data become available, trade observers expect they will show a considerable upswing at the manufacturing level of many nondurables. Evidence of this is already indicated in the upward movement in weekly paperboard and paper production data, starting in the latter part of July.

The recent strengthening and upward trend in demand for paper and board was also reflected in the wood pulp and waste paper markets. Many paper mills not integrated with their own pulp plants, looking forward to the fall and winter season, placed orders for pulp, with a resulting firming of prices, but with no price advances reported. Similarly, the increased production of paperboard had been reflected in a much stronger waste paper market, with, however, notable price advances in several grades.

RAW MATERIALS[1]

Pulpwood

Restricted woods operations still characterize the procurement of pulp-

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wood for pulp manufacture in most sections of the country. Mills generally have ample quantities of wood on hand despite the fact that, in some areas, these stocks have been drawn upon heavily during the current year. As a result of inactivity generally in the pulpwood markets, prices of pulpwood have shown little, if any, changes during August and expectations expressed by industry buyers do not indicate appreciable increases of pulpwood price levels when, and if, these buyers find it necessary to enter the market in the fall.

Wood Pulp

Reflecting the pick-up in paper manufacture subsequent to the July holidays, the indices of industry point to a corresponding upswing in wood pulp production during the last weeks of August and early September. The renewal of activity in the pulp market, attendant upon a reviving demand, has served to refresh the spirit of optimism that is traditional in the pulp and paper industry. That this optimism is tempered with moderation is evidenced by the reported conservatism of many paper mills, both integrated and nonintegrated, in their current wood pulp programs. Most nonintegrated mills, at least in the Great Lakes district, until the last few weeks, were still limiting their pulp purchases to care for their immediate orders only. These orders, in the Lakes area, as of September 1, were insufficient to maintain average mill schedules greater than five days per week. Nonintegrated mills in general, which up to recently were purchasing approximately 10-15 percent less than their consumption requirements, further reducing their inventories as a result, have displayed moderate interest in some strengthening of stocks in recent weeks. Regional integrated mills, operating largely on a six-day-per-week schedule, are maintaining generally low wood pulp inventories. Both of these developments may be interpreted as indicating that many pulp buyers and pulp manufacturers in the area in question are anticipating no immediate rise of pulp prices from their current low levels. Some trade specialists, in fact, are definitely of the opinion that the recent upsurge in pulp buying was hardly of a sufficient magnitude to cause a lift in prices.

These same sources call attention to the current extent of price differentials between grades of pulp, discrepancies much wider than those existing in the prewar period of relative normalcy. These differentials, according to the industry observers, may be indicative of a further easement in prices in the direction of a more normal relationship between grade prices. In 1939, for example, the greatest differential in the prices of chemical pulps did not exceed $10.00 per ton; current prices show a differential of as much as $40.00 between various chemical grades.

Production Ratios—1949

(Percent of capacity)

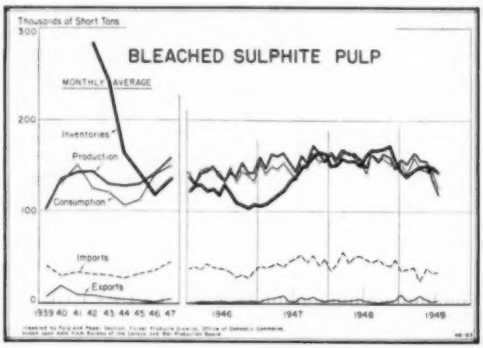
	Paper[1]	Paperboard
Jan.	94.6	88
Feb.	92.8	85
Mar.	89.1	79
Apr.	85.1	79
May	82.7	78
June	78.6	75
July	72.2	64
Aug.[2]	88.0	86
Week ending:—		
Aug. 6	83.3	82
Aug. 13	85.9	84
Aug. 30	89.9	87
Aug. 27	90.1	86
Sept. 3[2]	91.0	89

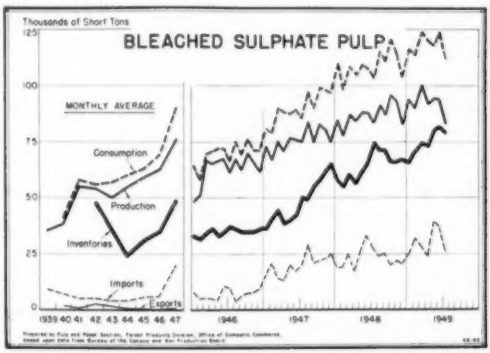
[1] Does not include newsprint.
[2] Preliminary.
Source: American Paper & Pulp Assoc. and National Paperboard Assoc.

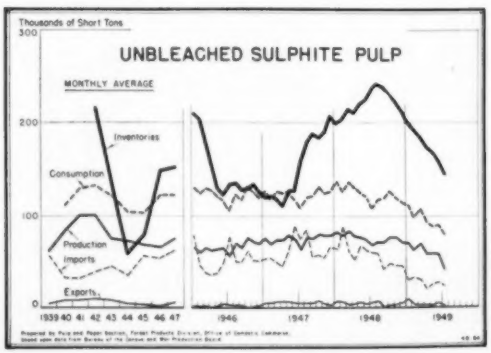
Waste Paper

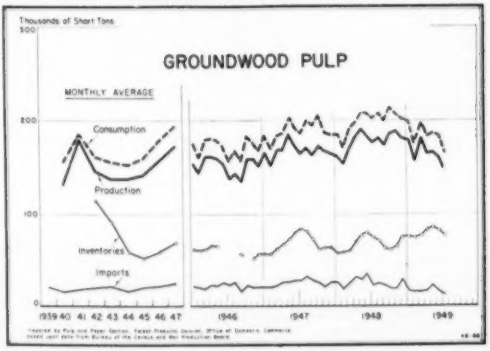
The improving trends in the waste paper market discussed in the August Industry Report have been maintained through early September. Even in the field of mixed papers, which for a considerable period has been in a state of acutely excess supply, there is noted in some areas an approach to a balance with demand.

The firmness in the market for corrugated containers continues with over-









all collections momentarily inadequate to meet the increasing requirements of paperboard manufacture. Reported upswings in the production of various grades of board has stimulated the efforts of mill buyers to acquire additional tonnages of corrugated. These efforts, however, augmented by advances of two dollars to three dollars per ton in corrugated prices have failed to swell collections of this stock, which—in large part—have not proved profitable during the recent past. Despite the insufficiency of corrugated, the outstanding strength of this grade has no doubt served as a rallying point for the restoration of confidence in waste paper circles.

News stock, too, while not paralleling corrugated from standpoint of scarcity, has registered a definite upswing toward a firmer market position. Stocks generally are reported as adequate though a moderation of excess supplies is due largely to a decline in collections, resulting from the diversion of peddlers to other commodities. Trade reports indicate the existence of appreciable stocks of news whose release is apparently awaiting further enhancement of prices.

MANUFACTURES
Paper and Board

Notwithstanding some of the localized areas of unemployment and business inactivity, Commerce Department Field Offices reported a marked upturn in general manufacturing, wholesale, and retail trade during the month of August. The pulp and paper industry was no exception, recording substantial gains following the low points reached in July. More optimism was expressed by paper and board manufacturers and wholesale paper merchants than has been heard in several months. Even with a higher level of business than existed in the past few months, the keynote of the paper trade continued to be improved services, higher qualities and keen competitive practices. Because of this, most industry observers express great satisfaction at the apparent stabilization of prices but, nevertheless, do not look forward to price advances in the very near future. For that matter, Commerce Department Field Offices recorded practically no price fluctuations during August with the principal exception being instances of higher quotations on certain kraft items. Even in this latter case some quizzical buyers viewed the higher asking prices primarily as a sales technique of temporary duration. As a consequence, the general feeling of the trade is that prices may likely remain steady and firm for some time ahead.

Production activity at the manufacturing level is, of course, governed by the business level of paper merchants, converters, printers and publishers and other users of paper. In a number of instances, merchants and some types of converters reported sales in August to have been better than any time so far this year. The principal problem facing many distributors, converters and printers, in view of the somewhat unexpected sharp upturn in demand in August, was the lack of sufficient inventories of quality paper in the various grades and specifications to be able to meet all immediate requirements. Contacts made by Commerce Department Field Offices indicated that inventories, in many instances, were purposely reduced in the late spring and summer months but now are too low to meet the service requirements of customers. As a consequence there seems to be a tendency to re-establish inventories in general to around a 60-day supply. This is considered essential in preparation of the expected sustained strong demands in September and October and, as indicated above, to meet the spot delivery demands of retailers or other consumers. The motto of many distributors now seems to be "an ability to deliver today gets the orders."

As pointed to briefly in the Economic Review section of this report, inventories of many commercial printers and publishers (excepting newspapers) were also reduced during the past many months reaching a point considered somewhat less than satisfactory, particularly in the case of present day qualities. It is said, however, that some publishers have substantial stocks left of wartime qualities for which they find little outlet under present competitive conditions. There is

reported increasing demands for various grades of offset paper attributable to the improved and new grades more adapted to the use of offset presses. There is also indicated that more and more of the smaller commercial printers are depending upon the wholesale paper merchant to carry the necessary inventories of proper grades to meet his needs rather than carry stocks himself.

The latest Bureau of the Census statistics at the time of preparation of this report are for the month of July. As prophesied in a previous month's report, July output was substantially lower than the normal seasonal lull because of the extended vacation periods combined with mill shut-downs for overhauling and a building up of the order files. An analysis of the July data are not of any particular significance either as a comparison with July of 1948 or with June of this year in view of the known sharp rise in production during August. There is, however, some noteworthy significance in viewing the accumulative data for the first seven months of this year which discloses that production of all types of paper and board was 13.6 percent below the same period of 1948. Even should the demand for paper and board rise much more than anticipated during September through December, and even if production should be at near capacity levels during this period, the aggregate United States output for the calendar year 1949 would still be about 1 to 1½ million tons less than produced in 1948. A more realistic expectation for the year 1949 would be an aggregate production of around 20 million tons as compared with the 22 million tons of 1948.

Similar to the condition which has prevailed in the last few months, newsprint is the only major group in the entire list of principal paper and board categories to record a gain this year against a year ago, being up 11 percent in the first seven months. All other categories recorded declines in comparison with 1948 ranging from around five to 25 percent. Building board was down 35 percent.

[1] Section on Raw Materials prepared by Walker J. Myers.

AMERICAN PAPER AND PULP ASSOCIATION'S PRODUCTION RATIO REPORT*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1949		Corresponding Weeks—1948	
Aug. 13	85.9	Aug. 14	96.1
Aug. 20	89.9	Aug. 21	97.7
Aug. 27	90.9	Aug. 28	95.2
Sept. 3	89.9	Sept. 4	94.8
Sept. 10 (Revised)	74.1	Sept. 11	78.1
Sept. 17	93.8	Sept. 18	97.5

COMPARATIVE MONTHLY SUMMARIES

1948						1949	
Jan.	100.5	May	100.5	Oct.	99.1	Jan.	94.6
Feb.	99.8	June	95.7	Nov.	97.1	Feb.	92.8
Mar.	100.8	July	85.3	Dec.	87.1	Mar.	89.1
Apr.	100.8	Aug.	96.8			Apr.	85.1
		Sept.	91.8	Year Avg.	96.2	May	82.7
						June	78.6
						July	‡72.2
						Aug.	‡88.0

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1942	1943	1944	1945	1946	1947	1948	1949
Year to Date	92.2	88.1	87.8	88.8	100.0	103.4	96.8	85.7
Year Average	90.4	87.8	88.1	89.4	101.1	104.3	96.2	

PAPERBOARD OPERATING RATIOS†

Current Weeks—1949		Corresponding Weeks—1948	
Aug. 13	84	Aug. 14	93
Aug. 20	87	Aug. 21	93
Aug. 27	86	Aug. 28	93
Sept. 3	89	Sept. 4	91
Sept. 10	72	Sept. 11	76
Sept. 17	92	Sept. 18	97

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1948	99	100	102	102	100	94	81	92	91	96	94	84	95
1949	88	85	79	79	78	75	64	86					

* All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to National Paperboard Association.

TRENDS

(Continued from page 7)

August Production

North American production totaled 522,583 tons during the month of August, compared with 497,993 tons in August, 1948. Output of the U.S. was 75,749 tons, of Canadian mills 446,834 tons, operating at 99.7 percent of capacity. Canadian mills produced 187,557 tons more in 1949's first eight months, an increase of 5.7 percent, operating at 101.7 percent of capacity. U.S. mills, 27,404 tons or 4.8 percent gain. Total continental increase was 214,961 tons or 5.6 percent, greater than in any preceding similar period, the NSB and NAC report.

OBITUARIES . . . .

J. Turner Tong of Hance's Point, Md., who was associated with the paper manufacturing industry for many years, died at Union Hospital, Elkton, Md., on September 21. After attending the Cherry Hill, Md., schools, Mr. Tong became associated with the Carter Paper Mill in Cecil County, Md., and eventually became superintendent of the company's plant. He later went to Chester, Pa., where he served as superintendent of the Scott Paper Co. plants there. More recently he was head of the Kenmore Paper Co. mills at Providence and Rockland, Md., and served in that capacity until the plants closed last spring.

Stanford Meadows, 58, a director of the Dennison Mfg. Co., Framingham, Mass., died at his home in that city on September 25. Mr. Meadows, who was in charge of marketing, had served with the company in Chicago, New York and Cincinnati before coming to Framingham 29 years ago. Surviving him are his widow, Mrs. Ruth (Evans) Meadows; a son, Stuart S.; his father, Bealy F.; and two brothers, James and Bealy A. Meadows.

A. T. Walker, 57, Central District sales manager for the Harris-Seybold Co., died in San Francisco on September 6 following a series of heart attacks, suffered shortly after he arrived in California to attend a printer's convention. He joined the H-S organization in 1916. Burial was in Cleveland. Surviving are his widow and a 13-year-old daughter.

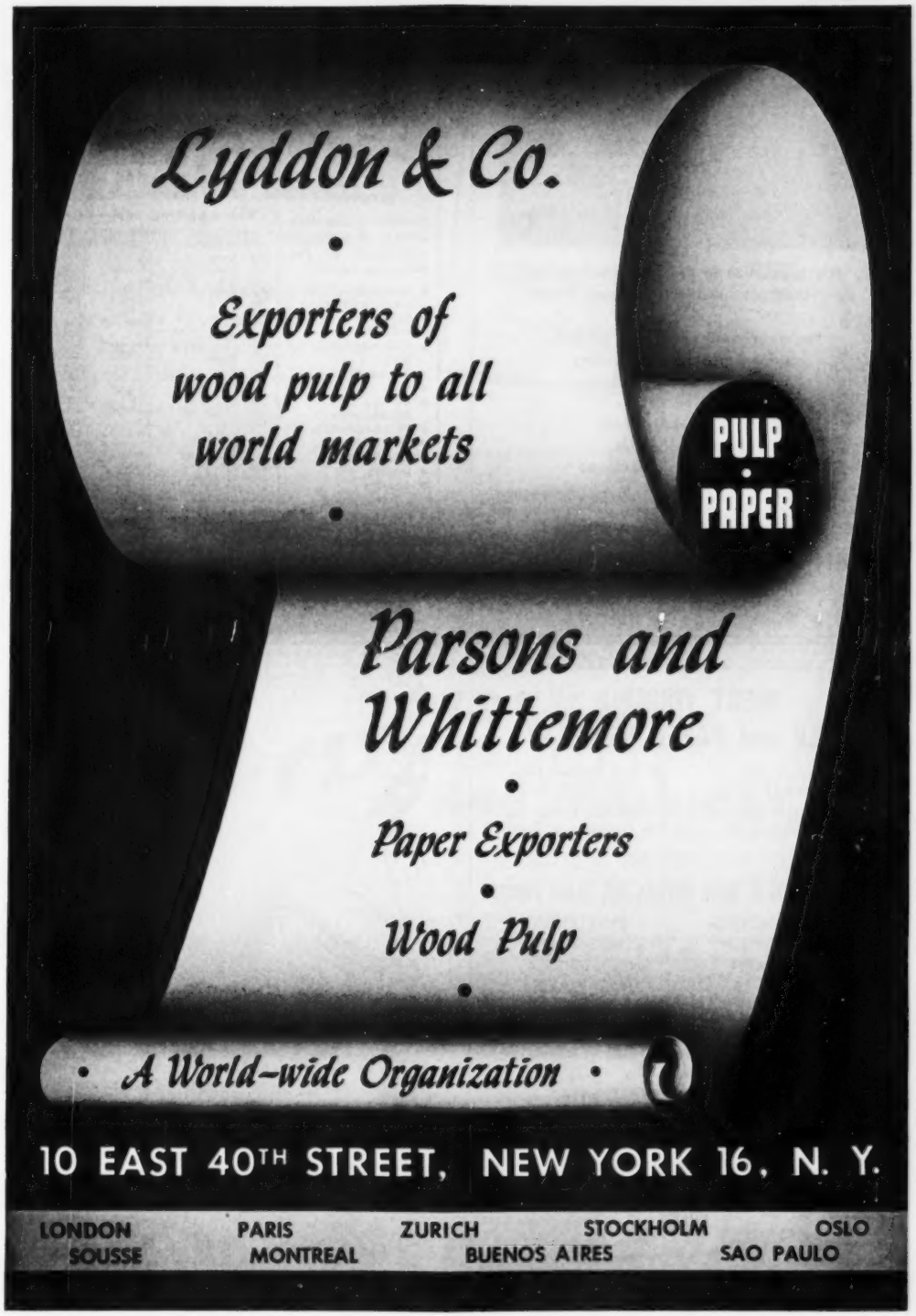
Charles H. Krause, 56, Hinsdale, Ill., paper manufacturer and broker, died in Weld County Hospital, Greeley, Colo., on September 18, following a cerebral hemorrhage which he suffered on the preceding day. Mr. Krause devoted a large part of his time to cattle raising and two years ago purchased the Quarter Circle Ranch at Roggen, one of the largest in Northern Colorado.

Jacob O. Hill, 73, purchasing agent of the Hollingsworth & Vose Co., East Walpole, Mass., died at his home in Wellsley Hills on September 23. Surviving him are two daughters, Mrs. Leonard Nickerson and Mrs. John E. Weyand, Jr.

Gedeon Pilon, 63, on the staff of the Canadian International Paper Co., for the past 24 years, died in an Ottawa hospital on September 12 following a brief illness. He is survived by his widow, three sons and two daughters.

Robt. E. Boyd, 73, vice-president of the Appleton Coated Paper Co., Chicago, died on September 22, following a long illness. He is survived by his widow and one daughter.

I. L. Shor, 75, treasurer of the Triangle Paper Co., Covington, Ky., died at his home in that city on September 14.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200	Westg.	CS-32B	440	720
200	Westg.	CS-950A	440	600
200	G.E.	IK-15A	440	450
150	Westg.	CS-771-1C	440	1750
150	Westg.	CS	2200	1200
150	Cont. TEFC	NP-743K	440	900
150	Westg.	CS-950A	440	600
150	G.E.	KT-564	2300	600
125	Westg. BB	CS	440	3600
125	G.E. TEFC	K-6326S	440	1200
125	G.E.	IK	2300	1200
125	Al. Ch. BB	AR-826DS	440	1200
100	G.E.	KT	2300	1800
100	Burke	EM-12.5	220	1200
100	U.S. Vert.	CFU-994A	220/440	1200
100	Al. Ch. BB	ARZ-826	440	900
100	G.E.	K-6333	440	720
75	Al. Ch.	AR-223-BS	2200	1800
75	Al. Ch. BB	AR-505	220/440	1200
75	Al. Ch.	AR	440	1200
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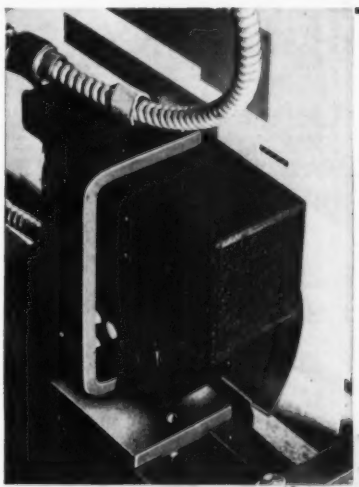

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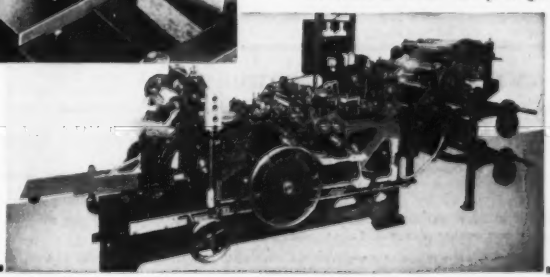

POTDEVIN
CELLOPHANE
Bag Machines

. . . have an eye for perfection.

An electric eye watches the web and controls a compensator which hurries or retards the feed. Regardless of weather, stock or machine speed the printed design is in perfect register with the cut-off on every bag.

This patented Potdevin feature cuts down rejects. Here are features that assure reorders. Potdevin made bags have an easy opening lip—rolled edges and clipped corners to guard against cellophane splitting.

Build your cellophane bag business around Potdevin machines. There's one for every bag style—flat, tucked or satchel bottom—single or duplex. 2 Potdevins will make all popular flat and square bag sizes at speeds up to 250 a minute.

POTDEVIN
EXPORT CORPORATION
1223 —38th St., Brooklyn 18, N.Y.

CLEARING HOUSE

HELP WANTED

MILL MANAGER

FOLDING BOXBOARD MILL LOCATED IN THE EAST HAS AN EXCEPTIONAL OPENING FOR A MAN OF UNUSUAL ABILITY. GOOD EDUCATION, PRACTICAL EXPERIENCE AND THE FACULTY FOR GOOD ORGANIZATION ARE OF UTMOST IMPORTANCE.

UNUSUALLY ATTRACTIVE COMPENSATION, INVOLVING FIVE-FIGURE SALARY PLUS PROFIT PARTICIPATION, AND FUTURE OPPORTUNITY ASSURED A MAN POSSESSING THE QUALIFICATIONS WE DESIRE.

REPLY IN COMPLETE DETAIL INCLUDING AGE, BACKGROUND AND SALARY EXPECTED. Address Box 49-467, care Paper Trade Journal. O-13

to a good ambitious salesman

. . . in the coarse paper field operating in the N. Y.-N. J. area whose present company is limiting his opportunity to grow.

We believe we can offer you the kind of a sales set-up you are looking for.

Let's get-to-gether and personally discuss how we can mutually benefit one another. Replies confidential. Write box 40, 217-7 ave, NYC 11. S-29

INSTRUMENTATION ENGINEER, well established firm, the leader in its field, needs services of graduate engineer, experienced in paper and pulp instrumentation. Position will involve product development and sales engineering. Requires traveling 40% of time. Compensation plan is attractive and gives full recognition to individual effort. Write Box 49-473 care Paper Trade Journal. S-29

MEN WANTED
Positions Open

General superintendent western mill, pulp as well as paper manufacturing, bond, envelope, mimeograph, writing, glassine, greaseproof papers, etc.; converting supervisor toilet tissue, towels, napkins; manufacturer shoe boards, wet machines; quality control man, preferably with college education; assistant superintendent tissue and light weight papers; pulp mill chemist (Canada); master mechanics and plant engineers; machine tenders and back tenders.

We invite correspondence (confidential) with mills seeking executives and with executives seeking new positions.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington Street, Boston, Mass. S-29

HELP WANTED

HELP WANTED

Opportunity for college graduate in small paper mill located in Eastern Pennsylvania ad process supervisor. Box No. 49-468, care Paper Trade Journal. O-13

WANTED
CONVERTING SUPERVISOR

Familiar with all phases of converting toilet tissue, towels, napkins, sheeting, slitting, and cutting. N.E. Location. Full resume please. Box No. 49-444 care Paper Trade Journal. O-6

ENVELOPE ADJUSTER

Experienced adjuster on wide range, SO and plunger machines. Permanent position with excellent opportunity for advancement. State age, experience and salary expected. Address Box 49-439 care Paper Trade Journal. S-29

SALARIED POSITIONS $3,500—$35,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (39 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, INC.
117 Dun Bldg., Buffalo 2, N. Y.
TF

WANTED

First class Paper Mill Superintendent for two machine mill.
Must have experience on straight Fourdrinier and Cylinder machines.
Also experience using old paper stock, making Kraft Papers, Corrugated Material, Boxboard specialties, etc.
Address all replies to,
James J. (Shorty) Andrews
Wallkill Paper Mills, Inc.
P.O. North Hoosick, New York TF

WANTED — MASTER MECHANIC: — Excellent opportunity for aggressive man having full knowledge of paper mill maintenance and experienced in handling men to obtain best results in maintenance and in keeping employees satisfied. We would like to hear from any man who feels that he would qualify. Please address Box 49-474 care Paper Trade Journal, giving full and complete information regarding experience, education, age, etc. O-13

HELP WANTED

TOUR BOSS—Thoroughly experienced on all grades of folding board. Excellent compensation and further opportunity in one-machine mill. Only applicants outlining past employers and full qualifications will be considered. Address Box 49-435 care Paper Trade Journal. S-29

MACHINE TENDER—Fully experienced on all folding grades. Good steady job with excellent opportunity in one-machine mill. Address Box 49-436 care Paper Trade Journal. S-29

SUPERINTENDENT: — Wood and Rag Preparation in manufacturing of Roofing Felt Paper on cylinder machines. Asbestos paper experience desirable. Age mid forties. Address Box 49-472 care Paper Trade Journal. S-29

WANTED—TOUR BOSS:—Are you a capable Tour Boss? Can you produce quantity and quality? If you can, we have just the job for you. Give full detailed information regarding your past experience and tell us why you think you qualify. Address Box 49-475 care Paper Trade Journal. O-13

SITUATIONS WANTED

CHEMIST—15 years Chief Chemist paper mill. Experienced color work, past four years resin research. Seeks new connection, laboratory or sales. Address Box 49-440 care Paper Trade Journal. O-6

CHEMIST — Veteran, 29, good personality, wants position plant chemist, product development and sales. Address Box 49-437 care Paper Trade Journal. O-6

PLANT ENGINEER or Master Mechanic—Practical experience in preventive maintenance of power and mill equipment in both Fourdrinier and cylinder mills. Excellent reference. Age 40 years. Address Box 49-445 care Paper Trade Journal. O-6

PAPER MAKER and Mechanic—Vast amount of experience, installing operating and maintaining cylinder and Fourdrinier machines and its auxiliary equipment. Excellent health. References. Address Box 49-448 care Paper Trade Journal. O-6

Desire position as **ASSISTANT** to **PRESIDENT** or **MILL MANAGER** or Technical Superintendent. College man, age 37. Excellent technical and production experience in board—pulp—mill, converting, cost-quality control, research and development. Now employed. Replies held confidential. Address Box 49-443 care Paper Trade Journal. O-6

SUPERINTENDENT—Fourdrinier or cylinder mill. High grade box board Kraft Specialties, .009 corrugating, Sulphite and groundwood specialties. Cost and quality conscious. Age 40. Excellent references. Address Box 49-446 care Paper Trade Journal. O-6

CHEMIST—Veteran, 32, single, good health. 2 years research in sulphate pulping and multi-stage bleaching. General knowledge of paper mill problems. Seeks employment in paper research, development or production. Address Box 49-461 care Paper Trade Journal. S-29

RATES FOR CLASSIFIED ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $2.50. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $2.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $2.50.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance. If box number is used—70 cents additional.

Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 18, N. Y.

FOR SALE

1—Paper Converting Machine Co. 4-Web Dispenser Type Napkin Folder. Production 100M per Hour.

1—Two-web Paper Converting Machine Co. Quarter Fold Napkin Machine. 13⅜ cut-off. With Embosser and Three color Printer. Capacity up to 30,800 per hour on printed stock.

CAMERON SLITTERS

1—40" Model 4-B.

1—42" Type 40-T.

1—50" and 1—60" Type 28, Model 3D.

1—52" Type 8-S.

1—50" and 1—54" Universal Type 6.

1—62" and 1—65" Type 9.

1—62" Type 10-S.

1—72" Type 10, Model 5.

1—Practically new 42" Kidder Merchant Model Shear Cut slitter and rewinder complete with 7½ HP Variable Speed motor equipment.

1—60" Kidder Model SH Slitter & Rewinder. Rewinds up to 40" diameter.

1—60" Hammersly Score Cut Slitter & Rewinder.

1—48" Inman Board Slitter and Rewinder. Rewinds 48" diameter rolls.

Power Paper Cutters: 6 Seybold—40". 1—10Z, 54" and 64" 20th Century, 54" Holyoke, 56" Dayton and 84" Seybold 2-H. 6 Oswego: 34", 38", 44", 50", 57". 2 Acme: 32" and 42". 1 White: 44". S&W Undercut: 63". 1—64" Sheridan.

1—50", 1—65" and 1—84" waxing machine.

1—Brand New Potdevin #102 Flat and Square Bag Machine, making bags from ¼ to 6 lbs.

3—Potdevin Flat & Square Bag Machines. Models 292, 294 and 391.

1—Seybold Embossing Press. Platen 28 x 38. AC Motor Equipment.

1—45" German Dornbusch Embossing machine with two sets of embossing rolls.

1—36" and 1—45" Beck Rotary Sheet Cutters with 3 roll backstands and jogger delivery table.

1—30" and 1—48" Clark Aiken Rotary Sheet Cutter.

1—72" Hamblet Single Rotary Sheet Cutter with Slitting Attachment, Automatic Layboy and 12-Roll Double-Deck Backstands.

1—82" single Hamblet rotary sheet cutter with layboy and 24 roll backstands.

1—98" Clark Aiken anti-friction bearing Single Rotary Sheet Cutter with slitting attachment. Moore & White 5 partition Layboy and 6 roll double-deck backstands. Excellent condition.

1—68" and 1—110" Downingtown Duplex Rotary Sheet Cutter.

6—Sharple Washer Breaker Beaters—Rolls 80" x 55".

1—81" Dietz Facial Tissue Paper perforator, 4¼" perforation.

2—81" Dietz Toilet Paper Perforators. Sheets 4½ x 4½ and 4½ x 5 and paper towels perforated 7½ and 13½".

1—#4 Hudson Sharp Special Folding Machine, complete with A.C. motor equipment.

1—41" wide 3-color roll to roll Wolverine aniline printing press. Complete with Reeves Drive and A.C. motor equipment, practically new.

1—Ohio Horizontal Baler. Makes bales 17 x 22 x standard lengths.

1—#2 Lannoye Pulper with Kenny-Falk Coupling and Gear Reducer.

1—Blaw-Knox #20 Pulpwood Grapple. With 36" Style "A" Equalizer Bar.

1—#14 Mitts & Merrill AIR-FLUFF Paper Excelsior Shredder. With AC Motor, Variable Speed Drive and 7' Feed Table.

15—two wheel Norman hand trucks. Especially adapted for handling mill rolls.

1—48" x 80" Dryer. Operating pressure 60 lbs.

GIBBS - BROWER COMPANY, INC.
21 East 40th St., New York 16, N. Y. S-29

SITUATIONS WANTED

ENGINEERING DRAFTSMAN — 10 years experience in the Kraft and Sulphite paper industry, desires change, something with a future. Experience consists of layout and design, installation supervision, coordination and maintenance. Now employed. Address Box 49-476 care Paper Trade Journal. O-6

FOR SALE

GOOD VALUES—NEW & USED

60" Hamblet Sheeter with Erie layboy and 10 roll backstand, double deck, with shafts and chucks, also 4 sets of slitters. A fine value.
34" Camachine No. 6 Slitter.
32" Hobbs and 34" Inman shear cut Slitters —very cheap.
39" Chandler & Price Automatic Power Paper Cutter.
New 44" National Auto. Power Cutters and 36" National Hydraulics.
Baling Presses—both hand and power.
Brackett 3-knife Trimmer.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18
(Plant at Stamford, Conn.) TF

FOR SALE

"One Ferguson Packomatic Case Sealing Machine complete with all operating equipment. Adjustable for case sizes.
"Two E. D. Jones & Sons Majestic Jordans with Motors and Electrical Equipment.
"Noble & Wood Mill complete with 600 HP Induction Motor, Magnetic Controller and Extra Equipment.

A. P. W. Products Company, Inc.
Albany, N. Y.
O-13

FOR SALE OR LEASE

Small paper mill with cylinder machine. Situated advantageously to sources of raw material and sales outlet. Ample room for converting plant in same building. Terms. Address Box 49-357, care Paper Trade Journal. TF

FOR SALE—Four color aniline press with sheeter and a four roll parent roll stand. Particularly adapted to production of fruit wraps. Priced for immediate sale. Address Box 49-456 care Paper Trade Journal. O-6

FOR SALE—1 Lockport 4 color Aniline Press—1—60 inch Langston Slitter. Both perfect condition. Joseph J. Mellwig, 4428 Frankford Ave., Phila., 24, Pa. S-29

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon, Laboratory Coating and Treating Machines. New improvement. MAYER MACHINE COMPANY, Inc., 1313 Buffalo Road, Rochester 11, N. Y. TF

FOR SALE—Small Cylinder Tissue Mill. Operating six days a week at present. Excellent Water Power. $50,000 cash required for inventory and down payment. Address Box 49-469 care Paper Trade Journal. O-13

FOR SALE—For export machinery and equipment of complete small tissue mill. Can be seen in operation during next sixty days. Address Box 49-470 care Paper Trade Journal. O-13

WANTED

WANTED—W & P Shredders, Evaporators Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 49-273 care Paper Trade Journal. TF

WANTED

WANTED TO PURCHASE

JOB LOTS AND CLOSE-OUTS OF ALL KINDS OF PAPER—THE LARGER THE QUANTITY THE BETTER. SUBMIT SAMPLES AND ADVISE QUANTITIES. CONTACT GEORGE S. BLEYER, BLEYCO PAPER CORPORATION, 419 WEST 55TH STREET, NEW YORK CITY.
S 29

WANTED

Titaniums—Glycols
Alkalies—Waxes—Solvents
Colors—Oils—Residues, etc.
Chemical Service Corporation
86-04 Beaver St., New York 5, N. Y.
S-29

PAPER MANUFACTURER desire to purchase or invest in converting business of standard paper products. Address Box 49-274 care Paper Trade Journal. TF

WANTED—Brightwood Box Machine. Address Box 49-275 care Paper Trade Journal.

WANTED—One cast-iron split pulley 60" diameter 24" face 4½" bore, also lathe capable of turning rolls up to 36" diameter. STOCKPORT PAPER CORPORATION, Stockport, New York. S-29

WANTED—Potdevin Garment Bag Machine, preferably with printer. Must be a reasonably late model in excellent operating condition. Address Box 49-463 care Paper Trade Journal. S-29

WANTED—78" or 80" Hamblet heavy duty Sheeter with layboy. Urgent. Address Box 49-460 care Paper Trade Journal. S-29

WANTED TO BUY — TISSUE PAPER MILL or TISSUE PAPER MACHINE; also 10 Dryers—4 feet diameter; Interfold and Household Towel Machines. Address Box 49-447 care Paper Trade Journal. N.C.

WANTED—Small printing machine for making lines ⅛" wide on rolls of paper before going onto winder. Address Box 49-471 care Paper Trade Journal. S-29

WANTED—PRESS SECTION COMPLETE WITH STANDS—3 BRASS AND 3 RUBBER COVERED ROLLS 22 TO 24" DIA. x 104" FACE FOR USE IN MANUFACTURE OF ROOFING FELT. THE CELOTEX CORPORATION, 120 S. La Salle St., Chicago, 3, Ill. S-29

CLASSIFIED ADVERTISING BRINGS RESULTS

FOR SALE
A Paper Treating Machine

This consists of the following:

Unwind stand: one set of press rolls with pan, bottom rubber covered, top gun metal. 16 x 84".

First section of five dryers 36 x 82" with bottom felt and Lodding doctors and spring roll.

Size press, rolls rubber covered and gun metal 16 x 84".

Second dryer section consisting of 18 dryers 36 x 82", with bottom felt, Lodding doctors and spring roll and frames for top felt.

80" Farrel calender with levers and weights, flexible doctors. Bottom roll 18" diameter, with 10" journals; one 12" roll; three 8" rolls and one 16" roll.

Open side Rice Barton reel with drums 18 x 78", 34" centers. Two drum Bagley & Sewall winder with slitter part, drums 12¼" x 94". Fourteen sets of Koegel slitters, anti friction.

Three spare press rolls and one spare dryer with gears. L. L.

Machine is driven by Reliance drive with motor generator set which was put in new in 1942 at a cost of about $14,000.00.

Equipment has been operating up to speed of 450 FPM, all set up, in very good condition.

Price $15,000.00. If interested telephone or wire us.

FRANK H. DAVIS COMPANY, 175 Richdale Avenue, Cambridge, Massachusetts

Telephone Trowbridge 6-0366

TF

CHAS. T. MAIN, INC.
CONSULTING ENGINEERS
Process Studies, Design, Specifications and Engineering Supervision
PULP AND PAPER MILLS
Steam, Hydraulic and Electrical Engineering
Reports, Consultation and Valuations
80 Federal Street — Boston 10, Mass.

The
TECHNICAL NUMBER
of
PAPER TRADE JOURNAL
will be
NOVEMBER 17, 1949

RODERICK O'DONOGHUE
CONSULTING ENGINEER
PULP MILLS — PAPER MILLS
IMPROVED PROCESSES — DESIGNS — REPORTS
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USED EQUIPMENT
EXTENSIVE INVENTORY of used paper-mill machinery. Preparatory — forming — converting. Many bargains. Satisfactory guarantee.
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Consultation, Reports, Valuation and Designs
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Presented in U. S. and Canada by
GEIGY COMPANY, INC.
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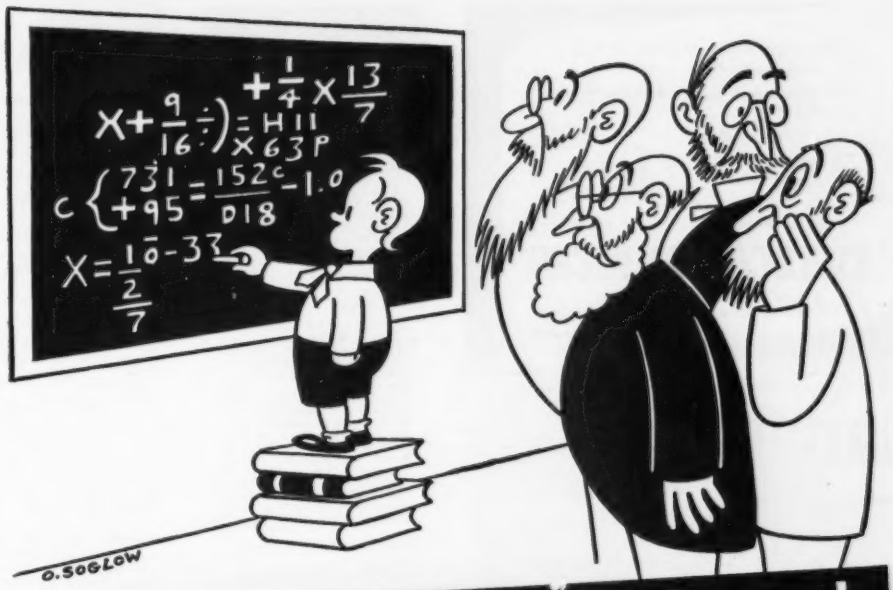
DEINKING — DECOLORIZING
COOKING PROCESSES
K-121-B and K-140
ENGINEERING
THE KINSLEY CHEMICAL COMPANY
4538 WEST 130th STREET — CLEVELAND 11, OHIO

SERVICE — Appleton Felts — FINISH — DEPENDABILITY — UNIFORMITY — DESIGN
APPLETON WOOLEN MILLS — APPLETON WISCONSIN

MISCO
STAINLESS STEEL CASTINGS
for all equipment exposed to corrosion by sulphite acids or other corrosive agents
MICHIGAN STEEL CASTING CO., DETROIT 7, MICH.



You'll be surprised at these figures!

- 80 million Americans own $48 billion of U. S. Savings Bonds.
- 20,000 of the nation's 38,000 firms employing 100 or more persons are operating Payroll Savings Plans.
- 7,500,000 workers are buying an individual average of $20 of Bonds per month.
- For the year 1948, sales of Series E Bonds exceeded redemptions by $495,148,000. The net figure for all Series after redemptions and maturities was $2,151,140,000.

What does all this mean to you? Well, it means first of all that your Treasury Department is successful in its program of increasing the nation's economic security by spreading the national debt. Secondly it means that most of the nation's business leaders recognize the value of the Payroll Savings Plan sufficiently to promote it within their companies.

For example...

To give you some idea of the Plan's growing popularity: 86,384 employees of a prominent electrical manufacturing company were investing in Bonds at the rate of $30,005,270 as of the end of 1948. This is a gain of nearly 100% over 1947, when 45,000 employees participated in that company. The treasurer of a well-known shoe company reported that, of his concern's 19,060 employees, 9,240 were in the Plan and had invested $146,807.32 in Bonds via deductions during the preceding month.

Why promote it?

We all know how buying Bonds builds an individual's future security. But there are *company* benefits too! Nation-wide experience shows that Payroll Savings increases each participating employee's peace of mind—makes him a more contented, more productive worker. It reduces absenteeism, lowers accident rates, increases output, and improves employee-employer relations.

It's easy to boost participation

1. See that a top management man sponsors the Plan.

2. Secure the help of the employee organizations in promoting it.

3. Adequately use posters and leaflets and run stories and editorials in company publications to inform employees of the Plan's benefits to them.

4. Make a person-to-person canvass, once a year, to sign up participants.

These first four steps should win you 40-60% participation. Normal employee turnover necessitates one more step:

5. Urge each new employee, at the time he is hired, to sign up.

Nation-wide experience indicates that 50% of your employees can be persuaded to join—without high-pressure selling. All the help you need is available from your State Director, U. S. Treasury Department, Savings Bond Division.

The Treasury Department acknowledges with appreciation the publication of this message by

PAPER TRADE JOURNAL

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and The Advertising Council.

- Design & Construction of Pulp and Paper Mills
- Steam and Hydro-Electric Power Plants
- Power Studies
- Reports and Appraisals
- Extensions and Alterations

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With Langston it, every cut is clear and true. You get "custom-tailored" finished rolls.

SLITTERS AND ROLL WINDERS
SAMUEL M. LANGSTON COMPANY, Camden, N. J.

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Pulp & Paper agents
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Nopco Chemical Co.
Norton Co.

ADHESIVES
American Anode Incorporated
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Glidden Company
The Goodyear Tire & Rubber Company
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Monsanto Chemical Co.
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Nopco Chemical Co.

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Appleton Machine Co.
The Biggs Boiler Works Co.
Dilts Machine Works, Inc.
Dorr Company
Downingtown Mfg. Co.
Hardinge Company, Inc.
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
D. J. Murray Mfg. Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
Warren Steam Pump Co., Inc.

ALLOYS
Michigan Steel Casting Co.
The Midvale Company

APRON CLOTH
Williams-Gray Co.

BAG MACHINES
Potdevin Machine Co.
Smith Winchester Mfg. Co.
Weber, Herman G., & Co., Inc.

BARKERS AND CHIPPERS
Allis Chalmers Mfg. Co.
Appleton Machine Co.
Carthage Machine Co.
D. J. Murray Mfg. Co.
Valley Iron Works Co.

BARS
Dilts Machine Works, Inc.
E. D. Jones & Sons Co.
The Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BEARINGS
Black-Clawson Company
E. D. Jones & Sons Co.
Link Belt Company
Magnus Metal Corp.
Midwest-Fulton Machine Co.
The Moore & White Co.
Shartle Brothers Machine Co.
Timken Roller Bearing Co.
Valley Iron Works Co.

BEATERS AND JORDANS
American Paper Mchy. & Engrg. Works, Inc.
The Appleton Machine Co.
Black-Clawson Company
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
The Midwest Fulton Mch. Co.
Morden Machines Co.
J. J. Ross Company
Ross Paper Machy. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

BED PLATES
Bahr Brothers Mfg. Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lukenweld, Div., Lukens Steel Co.
Midwest-Fulton Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BELTING
Alexander Brothers
Allis-Chalmers Mfg. Co.
The Cincinnati Rubber Mfg. Co.
The Goodyear Tire & Rubber Company
Link Belt Company
J. E. Rhoads & Sons

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E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Rohm & Haas Co.
Virginia Smelting Co.

BLEACHING BOILERS, ROTARY
The Biggs Boiler Works Co.

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Niagara Alkali Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

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Carthage Machine Co.
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Murray Mfg. Co., D. J.
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BRUSHES
M. W. Jenkins Sons, Inc.

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Farrel-Birmingham Co., Inc.
Lobdell Co.
Edward J. McBride
The Moore & White Co.
Perkins & Sons, Inc., B. F.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

CARRIER ROPE
Williams-Gray Co.

CASEIN
American Cyanamid Co., Industrial Chem. Div.
Hercules Powder Co., Inc.

CASTINGS
American Cast Iron Pipe Co.
Appleton Machine Co.
Babcock & Wilcox Co.
Black-Clawson Company
Carthage Machine Co.
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Frederick Iron & Steel, Inc.
Hamblett Machine Co.
Hardinge Company, Inc.
Lobdell Co.
Magnus Metal Corp.
Michigan Steel Casting Co.
The Midvale Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

WHERE TO BUY

smith & Winchester Mfg. Co.
Valley Iron Works Co.
Walworth Company

CENTRIFUGAL MACHINERY

Bird Machine Co.
Ross, J. O., Engrg. Co.
Shartle Brothers Machine Co.

CHAINS

Chain Belt Company
Link Belt Company

CHEMICAL COTTON PULP

Hercules Powder Co.

CHEMICALS

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American Anode, Incorporated
American Cyanamid Co., Industrial Chem. Div.
Ansul Chemical Co.
Calco Chemical Co.
Calgon, Inc.
Cowles Chemical Company
Diamond Alkali Co.
Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuffs Corp.
Geigy Co., Inc.
Gottesman & Co.
Hercules Powder Co.
Hooker Electrochemical Co.
The Kinsley Chemical Company
Monsanto Chemical Company
National Aluminate Corp.
Niagara Alkali Company
Nopco Chemical Co.
Philadelphia Quartz Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Rohm & Haas Co.
Solvay Sales Corp.
Virginia Smelting Co.
Wyandotte Chemical Corp.

CHESTS

E. D. Jones & Sons Co.
Kalamazoo Tank & Silo Co.

CHUCKS

Efficiency Engrg. Co.

CLEANING MATERIALS

Amer. Cyanamid & Chem. Corp.
Cowles Chemical Company
The Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Hercules Powder Co.
Monsanto Chemical Company
Nopco Chemical Co.
Philadelphia Quartz Co.
Pittsburgh Plate Glass Co.
Solvay Sales Corp.
Wyandotte Chemicals Corp., J. B. Ford Division

CLUTCHES

Appleton Machine Co.
Black-Clawson Company
Farrel-Birmingham Co.
Hardinge Company, Inc.
Hudson Sharp Machine Co.
Rodney Hunt Machine Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works

COATING MACHINERY

Frank H. Davis Co.
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Hudson Sharp Machine Co.
The Mayer Machine Co., Inc.
Moore & White Co.
Pottdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G., & Co., Inc.

COATING MATERIALS

American Anode Div., The B. F. Goodrich Chem. Co.
E. I. Du Pont De Nemours & Co., Inc.,
The Goodyear Tire & Rubber Company
Monsanto Chemical Company
Nopco Chemical Co.

COGS

The N. P. Bowsher Co.

COMPOUNDED LATICES

American Anode Div., The B. F. Goodrich Chem. Co.

COMPRESSORS

Allis-Chalmers Mfg. Co.
Nash Engineering Co.

CONDENSATE FILTERS

Hungerford & Terry, Inc.

CONSISTENCY REGULATORS

Askania Regulator Company
Bird Machine Company
DeZurik Shower Company
Paper & Industrial Appliances

CONSULTING ENGINEERS

Birk, F. Paul
Ebasco Services
Frank W. Egan & Co.
Ferguson, Hardy S.
C. M. Guest & Sons
Alvin H. Johnson & Co., Inc
Main, Inc., Chas. T.
Roderick O'Donoghue
The Rust Engrg. Co.
J. E. Sirrine & Co.
John Waldron Corp.
H. G. Weber & Co., Inc.
Frederick Wierk

CONTROLLERS

Askania Regulator Company
Black-Clawson Co.
The Bristol Co.
The Brown Instrument Co.
Cochrane Corp.
Johnson Corp.
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.

CONVEYORS

American Well Works
Black-Clawson Company
Chain Belt Company
Frederick Iron & Steel, Inc.
Industrial Brownhoist Corp.
Link Belt Company
Murray, D. J., Mfg. Co.
Ross Engineering Corp., J. O
Shartle Brothers Mch. Co.

CORE CUTTERS

Suburban Machine Co.

CORES

Elixman Paper Co.
Hubbard Spool Co.
Rodney Hunt Machine Co.
Smith & Winchester Mfg. Co
Sonoco Products Co.
Walker-Goulard-Plehn Co.

COUPLINGS

Black-Clawson Company
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Koppers Company, Inc.
Link Belt Company
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John

CRANES

Cleveland Crane & Engrg. Co.
Industrial Brownhoist Corp.
Link Belt Company
Whiting Corp.

CUP AND CONTAINER MACHINES

Mercury Engrg. Corp.

CUTTERS

Dilts Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Moore & White Co.
Perkins & Son, Inc., B. F.
The Smith & Winchester Mfg Co.
Taylor, Stiles & Co.

CYLINDERS

Askania Regulator Company
M. W. Jenkins Sons, Inc.
National Tube Co.

DAMPENERS

Perkins & Son, Inc., B. F.
Valley Iron Works Co.

DECKLE WEBBING

Williams-Gray Co.

DE-INKING

Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
Roderick O'Donoghue
Shartle Brothers Machine Co

DEINKING CHEMICALS

E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Kinsley Chemical Co.
Midwest-Fulton Machine Co.
Monsanto Chemical Company
Philadelphia Quartz Co.

DE-MINERALIZING EQUIPMENT

Hungerford & Terry, Inc.

DENSOMETERS

W. & L. E. Gurley

DESIGN CONSTRUCTION

Ebasco Services

DETERGENTS

Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

DEWAXING CHEMICALS

General Dyestuff Corp.
Nopco Chemical Co.

DIGESTERS

Babcock & Wilcox Co.
The Biggs Boiler Works Co.
Combustion Engrg. Co., Inc.
Foster Wheeler Corp.
Lukenweld
Pusey & Jones Corp.

DIRTEC

Bird Machine Co.

DISPERSING AGENTS

Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.

DOCTORS

Bird Machine Company
Black-Clawson Company
Downingtown Mfg. Co.
Lobdell Co.
Lodding Engineering Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DOCTOR BLADES

Bird Machine Company
Black-Clawson Company
Lodding Engrg. Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DRIERS

Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Hardinge Company, Inc.
Lukenweld
The Moore & White Co.
Murray Mfg. Co., D. J.
J. J. Ross Company
Red-Ray Mfg. Co., Inc.
Ross Paper Marchy. Co.
The Sand Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
The Youngstown Welding & Engrg. Co.

DRIVES

Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Bird Machine Co.
Black-Clawson Company
Chain Belt Company
Davis, Frank H., Co.
Dilts Machine Works
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Farrel-Birmingham Co.
General Electric Company
Gibbs-Brower Company, Inc.
Rodney Hunt Machine Co.
Link Belt Company
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Syco Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp

DRYER DRAINAGE

Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.

DUSTERS

Appleton Machine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
M. W. Jenkins Sons, Inc.
E. D. Jones & Son Co.
Moore & White Co.
D. J. Murray Mfg. Co.
John Waldron Corp.

DUSTING BRUSHES

M. W. Jenkins Sons, Inc.

DYESTUFFS

American Cyanamid Company, Calco Chemical Div.
Ciba Company
E. I. du Pont de Nemours & Co., Inc.
Geigy Co., The
General Dyestuffs Corp.
National Aniline Division, Allied Chemical & Dye Corp.
C. K. Williams & Co.
Witco Chemical Co.

EMBOSSING ROLLS

The Appleton Machine Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Midvale Company
Northern Engraving & Mch. Co.
B. F. Perkins & Son, Inc.
John Waldron Corp.

EMULSIFIERS

Adell Chemical Company
General Dyestuff Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

ENZYMES

Rohm & Haas Co.

EVAPORATORS

Davis Engrg. Corp.
Foster Wheeler Corp.
Goslin-Birmingham Mfg. Co., Inc.
Murray, D. J., Mfg. Co.
Swenson Evaporator Co., Div. of Whiting Corp.

EXPANDERS

Mount Hope Machinery Co.

FANS

General Electric Co.
B. F. Perkins & Son, Inc.
Ross Engineering Co., J. O.

FEEDERS

Hardinge Company, Inc.
Merrick Scale Mfg. Co.
Leeds & Northrup

FELTS

Appleton Woolen Mills
Asten-Hill Mfg. Co.
Bulkley, Dunton Pulp Co., Inc
Draper Bros. Corp.
Huyck & Son, F. C.
Lockport Felt Co.
Mt. Vernon-Woodbury Mills, Inc.
Morey Paper Mill Supply Co.
Orr Felt & Blanket Co.
Shuler & Benninghofen
Waterbury Felt Co.
Waterbury, H., & Sons Co.
Williams-Gray Co.

WHERE TO BUY

FELT CLEANERS
Adell Chemical Company
Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp.
Nopco Chemical Co.

FELT CONDITIONERS
Bird Machine Co.

FELT GUIDES
Black-Clawson Co.
Frank W. Egan & Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

FILLERS
American Cyanamid Company, Industrial Chemicals Division
W. H. Loomis Talc Corp.
A. M. Meincke & Son, Inc.
Vanderbilt Co., R. T.
Witco Chemical Co.

FILTERS
Bird Machine Company
Cochrane Corp.
Hardinge Company, Inc.
Hungerford & Terry, Inc.
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp.
Witco Chemical Co.
Walworth Company

FITTINGS
Crane Company
The Kuhns Bros. Co.
Phoenix Products Co.
Walworth Company

FLEXIBLE COUPLINGS
Ajax Flexible Coupling Co.
John Waldron Corp.
Koppers Company, Inc.

FLOORING, GRATING AND TREADS
The Goodyear Tire & Rubber Company
Norton Co.

FLOW BOXES, STAINLESS-CLAD
Lukens Steel Co.

FORK LIFT TRUCKS
Towmotor Corp.

FORMING MACHINES
Black-Clawson Co.
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
Oliver United Filters, Inc.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

FREENESS TESTERS
Testing Machines, Inc.

GASKETS
The Goodyear Tire & Rubber Company

GEARS
Black-Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Suburban Machine Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

GRINDERS
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company

GUIDES, WEB
Askania Regulator Company
The Moore & White Co.
Mount Hope Machinery Co.
Round Brook Engrg. Co.
John Waldron Corp.

GUMMING MACHINES
Dilts Machine Works.

GUMS
National Starch Products Inc.
Stein-Hall Co., Inc.

HEADS
Babcock & Wilcox Co.
Lukens Steel Company

HEAT EXCHANGERS AND RECOVERY SYSTEMS
William Allen Son's Company
Davis Engrg. Corp.
Foster Wheeler Corp.
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

HEATING, VENTILATING & AIR CONDITIONING
The Appleton Machine Co.
Armstrong Machine Works
Cochrane Corp.
Davis Engrg. Corp.
E. D. Jones & Sons Co.
General Electric Co.
Leeds & Northrup
Minneapolis-Honeywell Regulator Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

HOSE (Air, Water, Suction, etc.
The Goodyear Tire & Rubber Company

IMPREGNANTS
American Anode Div., The B F. Goodrich Chem. Co.

INDENTING MACHINES
Dilts Machine Works.

INDUSTRIAL TRACTORS
Clark Equipt. Co., Clark Trac tractor Div.
Towmotor Corp.

INK GRAVURE
Gotham Ink & Color Co.

INSTRUMENTS, TESTING AND MEASURING
Askania Regulator Company
Bauer Brothers Co.
N. P. Bowalter
The Bristol Company
The Brown Instrument Co.
E. J. Cady Company
Cochrane Corp.
The Foxboro Company
General Electric Company
W. & L. E. Gurley
Leeds & Northrup Company
National Technical Laboratories
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Williams Apparatus Co., Inc.

JOINTS
Johnson Corp.
Perfecting Service Corp.

JORDAN FILLINGS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black-Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Heppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KNOT BORING MACHINES
DeZurik Shower Company

LABORATORIES
Timber Engrg. Co.

LABORATORY EQUIPMENT
William Allen Son's Company
Appleton Machine Co.
Bauer Brothers Co.
The Biggs Boiler Works Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.

LAMINATING MACHINES
Dilts Machine Works.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.
Suburban Machine Co.

LUBRICANTS
Sinclair Refining Co.
Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

MAGAZINE REELS
Dilts Machine Works (Kohler System).

MATERIALS HANDLING
Cleveland Crane & Engrg. Co.
Frank G. Hough Co.
The Wellman Engrg. Co.

MICROMETERS & CALIPERS
E. J. Cady Co.
Farrel-Birmingham Co.
Montague Machine Co.
Lobdell Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

MOISTURE CONTENT CONTROL
Askania Regulator Company
Midwest-Fulton Machine Co.
Stickle Steam Specialties Co

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
Chicago Electric Company
Fairbanks, Morse & Co.
General Electric Company
Ingersoll-Rand Co.
Reliance Electric & Engrg. Co.

NICKEL AND NICKEL ALLOYS
The International Nickel Co.

NOZZLES
Link Belt Company

PACKING BOXES
Johnson Corporation
The Moore & White Co.
Perfecting Service Corp.
Shartle Brothers Machine Co.

PAINT
American Marietta Co., Valdura Division

PAPER MACHINES
Bagley & Sewall Co.
Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lukenweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

PAPER MACHINE SLICES
Black-Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Suburban Machine Co.

PASTING MACHINES
Black-Clawson Company
Davis, Frank H., Co.
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

PENSTOCKS
The Biggs Boiler Works Co.

PERFORATED METAL
Allis-Chalmers Mfg. Co.

PIPE
American Cast Iron Pipe Co.
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Michigan Pipe Co.
Michigan Steel Casting Co.
National Tube Co.
Walworth Company
Youngstown Welding & Engrg. Co.

PIPE FITTINGS
American Cast Iron Pipe Co.
The American Rolling Mill Co.
Crane Company
Ladish Company
Michigan Steel Casting Co.
Phoenix Products Co.
Walworth Co.

PIPE MARKERS
W. H. Brady Co.

PITCH CONTROL
General Dyestuff Corp.
Monsanto Chemical Company
Rohm & Haas Co.

PLATERS
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
J. O. Ross Engrg. Corp.
Lukenweld
Lukens Steel Company
Timken Roller Bearing Co.

PLUGS
The Appleton Machine Co.
Black-Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

PRECIPITATORS
Koppers Co., Inc.

PRECISION SAMPLE CUTTER
Testing Machines, Inc.

PRESERVATIVES
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

PRESSURE VESSELS, STEEL AND ALLOY
William Allen Son's Company
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
Combustion Engrg. Co., Inc.
Foster Wheeler Corp.
The Midvale Company

PRESSES
Black-Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
The Moore & White Co.
Paper Converting Machine Co., Inc.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULP CLASSIFIER
The Bauer Bros. Co.

PULP STOCK VALVES
Crane Company
Record Fdy. & Mach. Co.
Shartle Bros. Mach. Co.

PULPERS
American Paper Mchy. & Engrg. Works, Inc.
Bauer Brothers Co.
Dilts Machine Works
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Shartle Brothers Machine Co.

PULPS
Brown Company
Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Elof Hansson, Inc.
Lyddon & Co. (America), Inc.
Parsons & Whittemore, Inc.

WHERE TO BUY

Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.
Pulp Sales Corp.

PULPSTONES
Norton Company

PUMPS
Allis-Chalmers Mfg. Co.
Black-Clawson Company
Buffalo Pumps, Inc.
Byron Jackson Co.
DeLaval Steam Turbine Co.
Dorr Company
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Frederick Iron & Steel, Inc.
Gibbs-Brower Company, Inc.
Ingersoll-Rand Co.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Paper Converting Mch. Co.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Warren Steam Pump Company

RADIANT BURNERS
Red-Ray Mfg. Co., Inc.

RAG COOKING PROCESSES
Adell Chemical Co.
William Allen Son's Company
The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

RAG CUTTERS
Gibbs-Brower Company, Inc.
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

RECAUSTICIZING PLANTS
The Dorr Company

RECOVERY SYSTEMS
William Allen Son's Company
Babcock & Wilcox Co.
Bulkley, Dunton Pulp Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O.
Valley Iron Works Co.

REELS
The Appleton Machine Co.
Black-Clawson Company
Dilts Machine Works (Kohler System)
Downingtown Mfg. Co.
Hudson Sharp Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg Co.

REFINERS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS
Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
The Bristol Company
DeZurik Shower Company
The Foxboro Company
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
Midwest-Fulton Machine Co.
Minneapolis-Honeywell Regulator Co.
National Technical Laboratories
Shartle Brothers
Stickle Steam Specialties Co.
Taylor Instrument Companies
Wallace & Tiernan

RESEARCH CHEMISTS
Timber Engrg. Co.

RESINS
American Cyanamid Company, Industrial Chemicals Division
The Dow Chemical Company
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Rohm & Haas Co., Resinous Products Div.

ROLLS
American Cast Iron Pipe Co.
Appleton Machine Co.
Black-Clawson Company
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Edward J. McBride
The Midvale Company
The Moore & White Co.
D. J. Murray Mfg. Co.
Perkins, B. F., & Sons Co.
Philbrick Engrg. Corp.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John
The Youngstown Welding & Engrg. Co.

ROLL COVERS
The Cincinnati Rubber Mfg. Co
The Goodyear Tire & Rubber Company
Edward J. McBride
Stowe-Woodward, Inc.

ROLL HANDLING EQUIPMENT
Dilts Machine Works (Kohler System).

ROLL STANDS
Cameron Machine Co.
Frank W. Egan & Co.
Moore & White Co.
Potdevin Machine Co.
John Waldron Corp.
H. G. Weber & Co., Inc.

ROPE CARRIERS
The Moore & White Co.

ROTARY BOILERS
The Biggs Boiler Works Co.

ROTARY STEAM JOINTS
Johnson Corp.
The Moore & White Co.
Perfecting Service Corp.

RUBBER PRODUCTS
The Goodyear Tire & Rubber Company

SATURANTS
American Anode Div., The B. F. Goodrich Chem. Co.

SATURATING MACHINES
Black-Clawson Company
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Noble & Wood Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

SAVEALLS
Bird Machine Company
Hardinge Company

SCALES
Fairbanks, Morse & Co.
Merrick Scale Mfg. Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

SCREEN PLATES
Bird Machine Company
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Testing Machines, Inc.

SCREENS
Allis-Chalmers Mfg. Co.
American Paper Mchy. & Engrg. Works, Inc.
Appleton Wire Works
Appleton Machine Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

SHEET MACHINES
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Suburban Machine Co.
Valley Iron Works Co.

SHOWER PIPES
Bird Machine Company
DeZurik Shower Company
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co.
Shartle Bros. Mach. Co.
Smith & Winchester Mfg. Co.

SHREDDERS
Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.

SIZING
American Cyanamid Company, Industrial Chemicals Division
Black-Clawson Company
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Glidden Company
Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Philadelphia Quartz Co.
Stein-Hall Co., Inc.

SIZING TESTER
W. & L. E. Gurley
Testing Machines, Inc.

SLIME CONTROL
W. A. Cleary Corp.
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
Monsanto Chemical Co.
National Aluminate Corp.
Rohm & Haas Co.

SLITTERS
Black-Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Machinery & Prod. Engrg. Corp
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SMOKE STACKS
William Allen Son's Company
The Biggs Boiler Works Co.

SPECIAL MACHINERY
Dilts Machine Works.

SPLICING TISSUE
Williams-Gray Co.

SOFTNESS-STIFFNESS TESTER
W. & L. E. Gurley
Testing Machines, Inc.

SOLUBLE OILS
Adell Chemical Company
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

SOLVENTS
Adell Chemical Company

STAINLESS STEEL
American Cast Iron Pipe Co.
Armco Steel Corp.
Michigan Steel Casting Co.
The Midvale Company
U. S. Steel Corp.

STARCH
American Cyanamid Company, Industrial Chemicals Division
A. M. Meincke & Son, Inc.
Clinton Industries, Inc.
The Hubinger Co.
National Starch Products Inc.
Stein-Hall Co., Inc.

STEAM JOINTS
The Moore & White Co.

STEAM SPECIALTIES
Babcock & Wilcox Co.
Cochrane Corp.
Combustion Engrg. Co., Inc.
Davis Engrg. Corp.
Johnson Corp.
Midwest-Fulton Machine Co.
Perfecting Service Corp.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

STEEL
Allegheny Ludlum Steel Corp.
Armco Steel Corp.
Carnegie Illinois Steel Co.
Lukens Steel Company
Midvale Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

STEEL, CLAD
Babcock & Wilcox Co.
Lukens Steel Company

STEEL TANKS
William Allen Son's Company
The Biggs Boiler Works Co.

STRAPPINGS & STRAPPING MACHINES
The Stanley Works

STUFF CHESTS
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Midwest-Fulton Machine Co.
Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOXES
Black-Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

SUCTION UNIT
Paper & Industrial Appliances, Inc.

SULPHUR
American Cyanamid Company, Industrial Chemicals Division
Texas Gulf Sulphur Co.
Witco Chemical Company

SULPHUR BURNERS
Valley Iron Works Co.

SULPHUR DIOXIDE
American Cyanamid Co., Calco Chemical Div.
Ansul Chemical Company
Virginia Smelting Co.

SUPERCALENDERS
The Appleton Machine Co.
B. F. Perkins & Son, Inc.

SYNTHETIC LATICES
American Anode Div., The B. F. Goodrich Chem. Co.
The Goodyear Tire & Rubber Company
Nopco Chemical Co.

TACHOMETERS
The Brown Instrument Co.

TAKE-OFF UNITS
Dilts Machine Works (Kohler System).

TALC
American Cyanamid Company, Industrial Chemicals Division
W. H. Loomis Talc Corp.

TANKS
William Allen Son's Company
The Biggs Boiler Works Co
Cochrane Corp.
Kalamazoo Tank & Silo Co
The Noble & Wood Machine Co.
B. F. Perkins & Son, Inc.
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Waldron Corp., John

TEARING TESTERS
Testing Machines, Inc.

TENSILE TESTERS
B. F. Perkins & Son, Inc.
Testing Machines, Inc.

WHERE TO BUY

THICKENERS, DECKERS AND SAVEALLS
The Appleton Machine Co.
Bird Machine Company
Bulkley, Dunton Pulp Co., Inc.
Carthage Machine Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
Hardinge Co., Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
Oliver United Filters, Inc.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Valley Iron Works Co.

TIMBER ROOF TRUSS DESIGNS
Timber Engrg. Co.

TITANIUM
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.
Witco Chemical Company

TOOLS
The Stanley Works
Walworth Company

TRACTOR SHOVELS
Frank G. Hough Co.

TRACTORS & TRUCKS
Frank G. Hough Co.
Townsotor Corp.
Clark Equipt. Co., Clark Truc tor Div.

TRANSMISSIONS
Link Belt Company

TRAPS
Armstrong Machine Works
Cochrane Corp.
Crane Co.
Johnson Corporation
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co

TUBES
Babcock & Wilcox Co.
National Tube Co.

TUBING MACHINES
Dilts Machine Works.

TUBING, MECHANICAL
National Tube Co.

TUBS
Rodney Hunt Machine Co.
Shartle Brothers
Valley Iron Works Co.

TURBINES
Allis Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company
Hunt, Rodney, Mach. Co.

TURPENTINE RECOVERY
Foster Wheeler Corp.

UNWINDERS
Dilts Machine Works (Kohler System).

USED EQUIPMENT
Frank H. Davis Company
Gibbs-Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Corp.
Shartle Brothers Machine Co.
Suburban Machine Co.

VALVES
Askania Regulator Co.
The Bristol Company
The Brown Instrument Co
Cochrane Corp.
Crane Company
Dilts Machine Works
The Foxboro Company
E. D. Jones & Sons Co
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Pdv. & Mch. Co
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co
Taylor Instrument Companies
Trimbey Mach. Wks.
Valley Iron Works Co
Walworth Company

WASHERS
Bird Machine Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co
Moore & White Co
Oliver United Filters
The Sandy Hill Iron & Brass Wks.
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

WASTE TREATING EQUIPMENT
Alhydro, Inc.
The Dorr Company
Hungerford & Terry, Inc.

WATER CONDITIONING
Alhydro, Inc.
Calgon, Inc.
Cochrane Corp.
General Dyestuff Corp.
Hungerford & Terry, Inc.
National Aluminate Corp.

WATER DISPERSIONS
Alhydro, Inc.
American Anode, Inc.
Rohm & Haas Co., Resinous Products Div.

WATER FINISH EQUIPMENT
Dilts Machine Works.

WATER SOFTENERS
Hungerford & Terry, Inc.

WAXES
Hercules Powder Co.

WAXING MACHINERY
Black-Clawson Co.
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc
The Mayer Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co
Waldron Corp., John
Weber, Herman G.

WEB TENSION CONTROL
Dilts Machine Works (Kohler System).

WELDING EQUIPMENT
General Electric Company
Walworth Company

WET MACHINES
Black-Clawson Co.
Carthage Machine Co.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc
Moore & White Co.
Pusey & Jones Company
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WETTING AGENTS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Hercules Powder Co.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

WHITE WATER HEATERS, AUTOMATIC SELF CLEANING TYPE
Davis Engineering Corp.

WHITE WATER TREATING EQUIPT.
Hungerford & Terry, Inc.

WINDERS AND REWINDERS
The Appleton Machine Co.
Black-Clawson Company
Cameron Machine Co.
Dietz Machine Works
Dilts Machine Works (Kohler System)
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mach. Co.
Langston Co., Samuel M.
Moore & White Co.
Paper Converting Mch. Co
Potdevin Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Suburban Machine Co.
Waldron Corp., John

WINDING ROLL CHANGERS
Dilts Machine Works (Kohler System).

WIRE BRUSHES
M. W. Jenkins Sons Inc.

WIRES
Appleton Wire Works
Bulkley, Dunton Pulp Co., Inc.
International Wire Works
Lindsay Wire Weaving Co.
Williams-Gray Co.

WIRE BRUSHES
Williams-Gray Co.

WOOD SPLITTERS
The Appleton Machine Co.
Carthage Machine Co.

ADVERTISERS

IN THIS ISSUE

A

Allis-Chalmers Mfg. Co. 3
Appleton Wooden Mills, Inc. ... 44

C

Chicago Electric Co. 40
Cincinnati Rubber Mfg. Co. ... 37
Classified Advertising 42
Colledge, E. W. 41

D

Davis, Frank H., Co. 44

E

Elsasc Services, Inc. 46
Egan Co., Frank W. 20

F

Ferguson Co., H. K. 35
Ferguson, Hardy S., & Co. 44

G

Geigy Co. 44
Gibbs-Brower Co., Inc. 43
Goodyear Tire & Rubber Co. Back Cover

H

Hall, Thomas W., Co. 43
Hungerford & Terry, Inc. 40

I

International Wire Works 44

K

Kinsley Chemical Co. 44

L

Langston Co., Samuel M. 46
Lindsay Wire Weaving Co. 40
Lyddon Co. 39

M

Maitt, Inc., Charles T. 44
Mead Sales Co. 51
Michigan Steel Casting Co. 44

O

O'Donoghue, Roderick 44

P

Parsons & Whittemore 39
Potdevin Machine Co. 41
Price & Pierce, Ltd. 46

R

Raymond Service, Charles P. ... 42
Rohm & Haas Co. 6

S

Sandy Hill Iron & Brass Wks. 2
Shartle Brothers Machine Co. .. 44
Swenson Evaporator Co. Front Cover

T

Texas Co., The 4

W

West Virginia Pulp & Paper Co. 40

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